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ACU

JUNE 1991
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10 ginormous blow-up sharks must be won inside

THUNDER JAWS

ACU takes an explosive peek at Domark's superb sub-aqua blast

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Which 24-pin?Choose for yourself in ACU's epic print exposé

BUDGET BOOM

Check out our fantastic extended budget round-up and take in Fists of Fury, Extreme, 3-D Construction Kit and lots more as your favourite CPC games guide grows bigger

06
9 770952 304020

BrunWord

Complete Word Processing Package £30

BrunWord 6128 is a complete word processing Package consisting of a word processor, spelling checker and card filing programme. It out performs all other word processors for the CPC6128.

BrunWord uses its own high speed screen routine, giving it a very fast response. The editor features are logically arranged, to be easy to learn and the spelling checker with its dictionary load into memory at the same time as the word processor. The whole system is very convenient and exceptionally fast. It is supplied with an introductory tutor file.

BrunWord Features

*40, 80 or 128 columns. *Typing speed 200 words/min. *True insert or overwrite. *Justify or unjustify paragraph or whole text. *Balanced justification. *Instant word wrap. *Block save, move, copy, insert and delete. *Local editing with word delete/undelete. *Adjustable margins and TABs. *Word count. *Column/Line/Page display with file name. *Find and replace. *Help menus. *Memory files. *Single character embedded printer commands (18 with 3 codes and 21 with 10 codes). *Page throw markers. *Multiple copies. *Odd/even page headers/footers with page numbers. *Multi file printing. *Print specified pages. *Use any printer. *True display super/subscript numbers. *User defined characters. *Load/Save ASCII files from/to other word processors. *Files can be encrypted. *Maximum file size about 9 pages.

BrunSpell Features

*Memory resident programme and dictionary. *Checks 4,000 words/min. *30,000 word dictionary. *No American spellings. *Add up to 5,000 of your own words. *Instant lookup. *Helps to find correct spelling. *Automatic correction.

DataFile Features

*Alphabetical, numerical, date sorting. *User defined headings. *Search routine. *Data merging. *Label printing.

Quotes

"It may seem that I have just written a very long advert for BrunWord 6128 but I haven't, I'm just so impressed."
(Phil Craven, ACU Feb 90, page 25).

"One such is Peter Brunning's BrunWord 6128 which is without doubt in my mind, the most powerful and friendly word processor available for the 6128 today, with the possible exception of.... BrunWord Elite!"
(David Dorn, ACU July 90, page 43).

How They Compare

	BrunWord 6128 & BrunSpell	Protext Disc & Prospell	Tasword 6128 & Taspell
Typing into 241 word paragraph Typing into start of text	218 w/m 218 w/m	218 w/m 218 w/m	16 w/m 150 w/m
Scroll to end, line by line	1 min 27 sec	2 min 2 sec	2 min 25 sec
Justify paragraph of 241 words	1 sec	0·2 sec	34 sec
Change appearance to format and Appearance to Format	17 sec	17 sec	53 sec
Spelling check 3366 words Average speed Disc changes	52 sec 3883 w/m None	6 min 24 sec 526 w/m 8	18 min 46 sec 179 w/m 3
Spelling help 'NECESERY' Spelling check word at cursor	1 sec 0·5 sec	12 sec Not possible	Not possible Not possible
Screen format - columns Page boundaries	40, 80, 128 Shown	40 or 80 Not shown	80 only Shown

BrunWord Elite

Elite Word Processor For CPC6128 £55

BrunWord Elite has a unique advantage over its rivals, it can only be used with dot matrix printers. All other word processors are compromised to drive daisy wheel and dot matrix printers.

In the early days of computing a printer was simply a form of electric typewriter. (High quality printing, noisy and very slow). Then came the dot matrix printers, specially designed for computers. (Medium quality printing, not so noisy and much faster). Over the years, the typewriter style has become the daisy wheel printer and although greatly improved, it has been left far behind with the quality, speed and versatility of modern dot matrix printers.

Most word processors, including BrunWord 6128, can use dot matrix and daisy wheel printers. This creates the need for a style of printer control that is acceptable to two very different types of printers.

BrunWord Elite does not have this restriction as it is specifically written to be used only with dot matrix printers. This gives it a unique advantage over other word processors and as a result it is able to provide much more advanced printer control.

This is taken even further, as BrunWord Elite is supplied with an 8 Bit Printer Status Port which allows the programme to continuously monitor the status of the printer, (as well as providing the missing 8th bit for the original CPC6128). This means that BrunWord Elite is able to respond in a more sophisticated way than normally possible. It will wait for ON LINE or <ESC> if the printer is initially OFF or OUT OF PAPER but automatically returns to the editor if the printer is turned OFF.

24 Pin Fonts

Before we designed the fonts for BrunWord Elite, we studied several good magazines and concluded that the bulk of the text was printed in fonts that derive from two basic themes. Our fonts Fineline and Finetype are variations of these two styles, optimised for dot matrix printers. Fineline is supplied in three sizes and Finetype in two sizes. To these we added a display font in computer style type and a straightforward 'Heavy' font. Altogether there are 7 fonts supplied, four are full 24 pin fonts, two are middle size 21 pin fonts and one is a small size 16 pin font.

BrunWord Elite Features

All the features and speed of BrunWord 6128 and BrunSpell, plus:-

*Print in columns *Specify page layout *Use special high quality proportional fonts *Use advanced micro justification with proportional text *Set printer margins independently *Move print head up or down paper, specified in inches from top *Set micro line spacing within text *Print line or box by specifying size and line thickness *Use absolute TABs with proportional text *Download a file directly from disc during printing. *Can be supplied with Info-Script for data merging.

Headline

Headline is a print enhancement utility specially designed for use with low cost 9 pin printers. It enables virtually all the features of BrunWord Elite, including the 24 pin fonts, to be used with any 9 pin Epson compatible printer. The only requirement is that the printer must have quadruple graphics (all well known modern 9 pin printers). Even printers which do not have double height printing will be able to use all the features of Headline, including micro justification, normal, double and eight times height, and 1 to 9 times width.

9 Pin Elite £55

BrunWord Elite, BrunSpell, Headline, an 8 bit printer status port and 7 'type setting' fonts (fonts are 24 pin in size but only for 9 pin printers). Total price £55.00 inclusive.

9 Pin Elite+Info £92

As above but including Info-Script and a backup disc. Total Price £92.00 inclusive.

24 Pin Elite £90

BrunWord Elite, BrunSpell, Info-Script, back up disc, an 8 bit printer status port and 7 'type setting' fonts for downloading to a 24 pin printer. Total price £90.00 inclusive.

Info-Script

Complete Data Processing Package £50

Info-Script includes BrunWord 6128 and BrunSpell. The word processor and database can be resident together, giving the convenience of access to both programmes with no disc delays.

Info-Script is written around the full BrunWord 6128 word processor, enabling many routines to be common. This makes a very compact combination and allows both programmes, 6 pages of text and 1000 addresses to be in the memory at the same time using a standard CPC6128 (or 6128 plus). The great advantage of this is the speed and convenience of no disc delays.

Database Features

*Very fast (e.g. takes 1 second to search 2000 addresses for surname 'Smith', initial 'B'). *Specific field search and/or progressive general search. *Instant sort on any field, alphabetical, numerical, date or reverse order (zero time as the data does not move). *3 sets of user defined headings for each file. *4 markers for instant selection, plus one temporary marker. *Markers can be cleared or inverted and any pair can be added (allows complex searches to be quickly and easily performed). *No setting up of field type or length. *Efficient storage. *Relational records, Parents, Sons and Daughters. *Field to field arithmetic. *Direct data merging into BrunWord. *Easy direct label printing, 1 or 2 across, left of 2 or right of 2. *Single or multi-step.

Data Merging Features

*Simple intelligent system, &N &A &D construct full name, full address and date. *&1 &2 etc specify individual fields. *Insert or fixed format merging. *Automatic justify after merging. *Single step (see before printing) or multi-step. *Stop any time, go to word processor, restart same place. *Merge data from several records for summary, invoice, purchase order etc. *Arithmetic. *Running total. *VAT total. *Conditional loading. *Conditional printing. *Repeat patterns.

100 Letters £15

100 Letters is a utility for use with Info-Script, enabling pre-written letters to be easily selected and personalised. It is supplied with a library of 50 letters but even the most cautious users will be able to write simple letter patterns to expand the library to '100 Letters'. If multi-purpose patterns are used then the upper limit depends only on the skill of the writer. A third type of letter pattern, aimed at solicitors, doctors, school teachers, estate agents etc, consists of up to ten pre-written paragraphs. The user indicates which of the paragraphs are to be used. 40 separate letters can be added using this style.

Send cheque/PO/Access number/Visa number to:

Brunning Software
138 The Street,
Little Clacton, Essex, CO16 9LS
Telephone (0255) 862308



BrunWord 6128 with BrunSpell & DataFile. . . £30.00
Info-Script with BrunWord 6128 & BrunSpell. . £50.00
9 Pin BrunWord Elite £55.00
9 Pin BrunWord Elite with Info-Script. £92.00
24 Pin BrunWord Elite with Info-Script. £90.00
100 Letters (needs Info-Script). £15.00

Supplied on 3in Disc for CPC6128 or CPC6128 Plus.
You must state which computer.

All prices are inclusive for UK. Overseas orders sent insured air mail - Europe add £2.50 : Rest add £7.50

BrunWord

Font Editor £20

Our very first font was designed using the Qualitas font editor, for use with BrunWord 6128 and Qualitas. The result, although good by low cost printer standards, was well below type setting quality.

So we designed BrunWord Elite, to bring polish to the quality of ordinary printing. Originally released for 24 pin printers and now also available for 9 pin printers, its quality is summed up by a question from a potential buyer. "Surely the sample you sent was printed on a laser printer?" An experienced eye can see that a 9 pin printer was the source but the buyer was expressing his overall impression of the appearance.

Such comments are not surprising when you consider that BrunWord Elite characters can be made up of 3 times as many dots as normal Near Letter Quality.

Designing a font can be a frustrating task. The heart of our 32 pin font editor has been around for longer than BrunWord Elite, but we wanted a more direct way to generate and manipulate fonts. We had a vision which was an impossible dream but we 'value engineering' the idea to realism. Our BrunWord Elite Font Editor has all the normal font design facilities with two new and exciting dimensions. It is possible to change the outline size of a character by pressing one key and it is possible to transfer hand drawn characters into the editor.

The size change routines can be used by anyone and it is possible to convert the existing BrunWord Elite fonts to the full 32 pin size or to create an in between size. One key press and the character size is changed but some final editing is usually needed.

The scanning of hand drawn characters into the editor requires the use of a Dart Scanner and an Amstrad 9 pin printer (which are not included). Just imagine how you would go about designing a completely original font. It's almost impossible to know where to begin and the limitations of putting dots directly onto a screen kills most people's creative urge. The character scanning system allows the creative element to be performed off screen with pen and ink. Once you have the character set designed, the task of transferring this into the editor is a routine process, requiring only minimal creative energy.

The BrunWord Elite Font Editor can save fonts for use with 9 pin or 24 pin printers but must start with the font in the Headline format.

32 Pin Fonts

We have created two new fonts 'Chelmer' and 'Clacton' which cost £10 each. These are full size 32 pin fonts for use with Headline but a 24 pin version (for 9 or 24 pin printers) can be generated using the BrunWord Elite Font Editor.

Which One?

We are often asked which of our word processors is best for a non technical person. The answer is simple. As BrunWord 6128 is the corner-stone of all our programmes, your first steps will be delightfully easy, whichever programme you choose.

If you must have a mail merge system then BrunWord 6128 could be your best buy but the ease of use and convenience of Info-Script makes it the serious choice. If you consider mail merging to be unnecessary then '9 Pin Elite' is without doubt the best value of all our packages.

The full '9 Pin Elite + Info-Script' is for the serious perfectionist who also needs a database.

Free Booklet

Our 16 page free booklet explains all about our programmes. Send a large SAE (9*12inches & 2*17p stamps) to 'BrunWord & Printer', Brunning Software, at the address below. (No need to write a letter).

Quote

"I bought it (BrunWord Elite) because I hoped its unique page layout routines and high quality fonts would enable me to produce professional looking newsletters and eye catching promotional material. I wasn't disappointed. BrunWord did all these things and more." (Vic Barnes, ACU Dec 90 page 24).

BrunWord 6128 £30

Complete word processing package with word processor, spelling checker and card filing programme. BrunWord 6128 out performs all other word processors for the CPC6128. It's high speed screen routine, gives it a very fast response and the editor features are logically arranged to be easy to learn. The spelling checker, with its dictionary, load into memory at the same time as the word processor, making access very convenient and exceptionally fast. It is supplied with a 40 page manual and an introductory tutor file.

Info-Script £50

Complete data processing package, including all the features of BrunWord 6128 and BrunSpell. The word processor and database can be resident together giving the speed and convenience of common access with no disc delays.

9 Pin Elite £55

The Elite system for 9 pin printers consists of BrunWord Elite, BrunSpell, Headline, 8 bit printer status port and 7 'type setting' fonts (fonts are 24 pin in size but for 9 pin printers). Total £55 inc.

9 Pin Elite+Info £92

The Elite system as above but including Info-Script and a backup disc. Total price £92 inclusive.

24 Pin Elite+Info £90

BrunWord Elite, BrunSpell, Info-Script, back up disc, 8 bit status port and 7 'type setting' fonts for downloading to a 24 pin printer. Total £90 inc.

BrunWord Elite Fonts

Printed using low cost 9 Pin Printer & shown 70% actual size

Fineline — Our Fineline fonts are the sharpest characters that the printer can produce and three sizes are supplied with BrunWord Elite. This 24 pin size is the largest.

Finetype — Our Finetype fonts are two pins thick on the vertical, shaped down to one pin thick on the horizontal. Two sizes are supplied.

Comput — Comput is a display font designed primarily for main headings. It can be rather overpowering in large paragraphs.

Heavy — Last of our standard fonts is 'Heavy'. This has a similar outline to Fineline but with a thicker line. It can be used for ordinary correspondence.

Chelmer — **Our most sophisticated font. Mathematical uniformity, contoured thickness, Chelmer is a true aristocrat among fonts.**

Clacton — *In total contrast 'Clacton' is a relaxing flowing, seaside font, inspired by the local resort and based on characters hand drawn by Peter Brunning.*

Chelmer and Clacton are optional extras and can only be printed using Headline.

Send cheque/PO/Access number/Visa number to:

Brunning Software
138 The Street,
Little Clacton, Essex, CO16 9LS
Telephone (0255) 862308



BrunWord 6128 with BrunSpell & DataFile. . .	£30.00
Info-Script with BrunWord 6128 & BrunSpell. .	£50.00
9 Pin BrunWord Elite	£55.00
9 Pin BrunWord Elite with Info-Script.	£92.00
24 Pin BrunWord Elite with Info-Script.	£90.00
Elite Font Editor with 'Chelmer' & 'Clacton'. .	£25.00

Supplied on 3in Disc for CPC6128 or CPC6128 Plus.
** You must state which computer. **

All prices are inclusive for UK. Overseas orders sent insured air mail - Europe add £2.50 : Rest add £7.50

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Editor
Chris Knight
Group Technical Editor
John Taylor
Columnists
John Cook
Vyk Olliver
DM
David Dorn
Designers
Paul Ellis
Adrian Hulf
Illustrator
Julian Sharp
Advertising Executive
Adrienne Gilliver
Production Controller
Jayne Penfold
Production Assistant
Rachel Dixon
Deputy Managing Director
Ray Lewis
Managing Director
Peter Welham
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REGULARS

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More gossip from Arnoldland, including the latest games updates and much, much more

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Ziggy's back to his normal size this month and swears he'll never try another potion picked up off the floor of an adventure game.

10-LINERS 12
Music demos to get your feet a-tapping take pride of place in this month's assortment.

HAIRY HACKER 20
Another deep dig in the mailbag to keep you all at your level best.

COMBAT ZONE 22

After last month's foray into the seafront arcades, Cookie returns south for the latest coin-op hits.

THE DUNGEON MASTER 26
More names to add to the Scroll of the Wisdom and some very handy hints from DM.

GAMEPLAN 29
Sizzling baseball action and extended budget coverage to keep you trigger finger itching.

COMMS 40
Keep communicating through your modems and Gordon'll give you your just desserts.

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Public Domain games get the going over from Paul Tint this month, and they're not half bad.

BASIC 46
Sort your strings out and soldier on as Glynne Davies eases those programming blues.

LISTING 51
An excellent shopping routine that'll show just how much, or little, you can afford at the supermarket.

BITS 'N' PIECES 62
More goodies to swap, sell and buy from your very own good selves.

APPLICATIONS 49
Doc Dorn sorts out more of those agonising problems to help you save money on aspirins.

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10 huge inflatable sharks must be won with this month's superb ACU drawing compo.

CP/M+ 16
John Hudson rounds up his little thesis on operating systems with some helpful advice.

CPC NETWORK 58
David Dorn's curious nose drives him deeper into the realms of networking with this well-established set-up.

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Which 24-pin? Find out as Duncan Evans takes them out for a test run.

PRETTY PERFECT 60
Design your very own fonts for that personal printing touch. Vic Barnes investigates.

MYTH 56
Our hero's quest continues into Ancient Greece. Dare you join him?

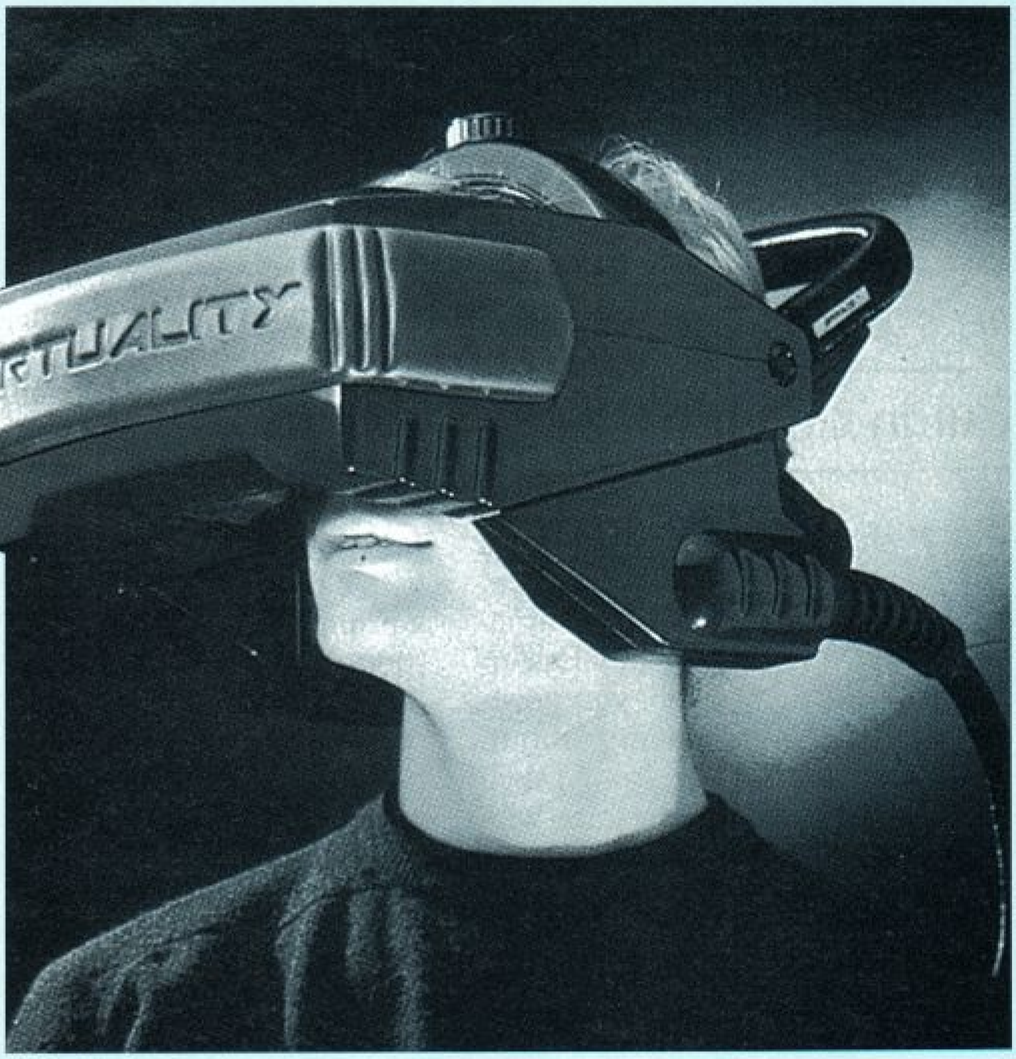
THE REAL THING

A few weeks ago, our hero Ziggy wandered along to a little show at Wembley to try out something John Cook mentioned back in the March issue. Yep, you've got it, the new Virtuality system and, boy, was he impressed.

Virtuality must be the most important development in the world's leisure market for more than 20 years, apart from Arnold that is, allowing you to interact with other players and computer generated characters in a totally 3D world.

The Virtuality 1000 SD sit-down system takes you way off of the surface of this planet and should be coming to an arcade near you very soon for trial purposes.

As Ziggy himself admits, he wouldn't have missed the experience for anything, not even a peek at Hairy's mailbag, keep your ears to the ground and make sure you're around when the Virtuality system comes to town. You won't be disappointed.





JAWS FAITHFULLY

Time to get your scuba gear on and try out the shark infested waters, with Domark's latest epic release THUNDER JAWS. Deep down in the cybershark and mutant manta filled oceans, lies a submerged laboratory. Along with a friend, the aim of this Buddy-buddy shoot-em-up is to get down there and rescue the beautiful damsels in distress.

If you don't make it, they'll be transformed into lizard monsters so, steel your nerves, watch out for the underwater explosions and caverns, and get blasting.

If you can't find this beauty in the shops, go and order it now; you don't know what you're missing out on!

ALL CHANGE

As from next month, the illustrious ACU team has decided to go it alone and has forsaken the glittering arches of the MSM offices to take up residence in a humble abode out in the wilds.

Shock! Horror! But what does all this mean to you? Absolutely nothing. Your favourite CPC magazine will continue to grow, bringing you the best all-round coverage for your trusty Arnolds, with some natty ACU changes taking place to brigten it up. With the prospect of some red hot cover cassettes towards the end of the year and some excellent summer promotions, the only thing you need to worry about is where to send your mail.

Ok, so if you've got any letters, problems, hints, tips, cheats, pokes, 10 liners, listings, hardware projects, or just about anything you want to send to us at ACU, here's the new address to send them to:

ACU
Sunnyside Cottage
Carluddon
St. Austell
Cornwall
PL26 8TY.

However, for advertising purposes, or anything nasty, the MSM address in Goswell Road, London EC1, is still well and truly open all hours as it were.

PLANET SAVING



Keep your eyes peeled for a truly epic ecological blast from Mindscape in the form of Captain Planet and the Planeteers. What's greener than the Turtles? Doesn't eat Pizza?... And certainly wouldn't live in a sewer?

That's right, Captain Planet and, if you fancy getting hold of some serious thought provoking software, get a hold of this one when it gets on the shelves, as our hero battles it out in the fight to cleanse our fast deteriorating world.

LOST LISTING

Last month we published a database listing, giving an incorrect credit to Alan Kennedy for the hard work. In actual fact, due to a mix-up of discs, the program, in fact, forms a part of the Tug 2 disc available from Alan Scully's Scull PD library.

We apologize for the mix-up and, if you would like to get hold of more of the same, the address for Scull PD is listed in this month's PD Scene.

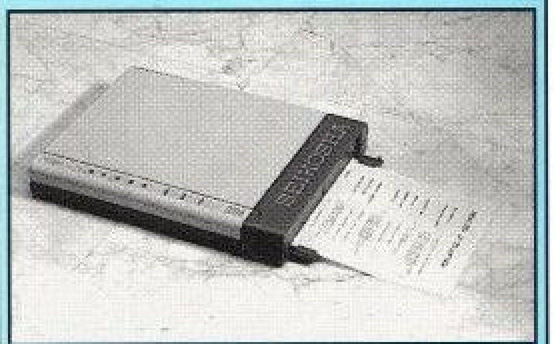
Those of you wanting to see some of Alan Kennedy's real work should catch his Shopping Master routine on page 59. You'll find it just as handy.

LAPTOP ATTACK

Fancy getting hold of a revolutionary new portable dot matrix printer for under £400?

Then get alone to your local computer store and grab the new Seikosha LT20, the world's first laptop dot matrix printer.

Weighing just 5.9lbs, the printer is



designed to fit snugly under any notebook and, with printing speeds of up to 180cps in draft and 60cps in LQ, the LT20 is a pretty efficient workhorse for its size.

With nine easily-programmable fonts and the ability to stack 50 sheets of paper ready to print, the machine is extremely versatile and houses a standard parallel interface.

At just £369 plus VAT, the LT20 is state of the art equipment at real value for money cost.

A BITE AT THE PIZZA

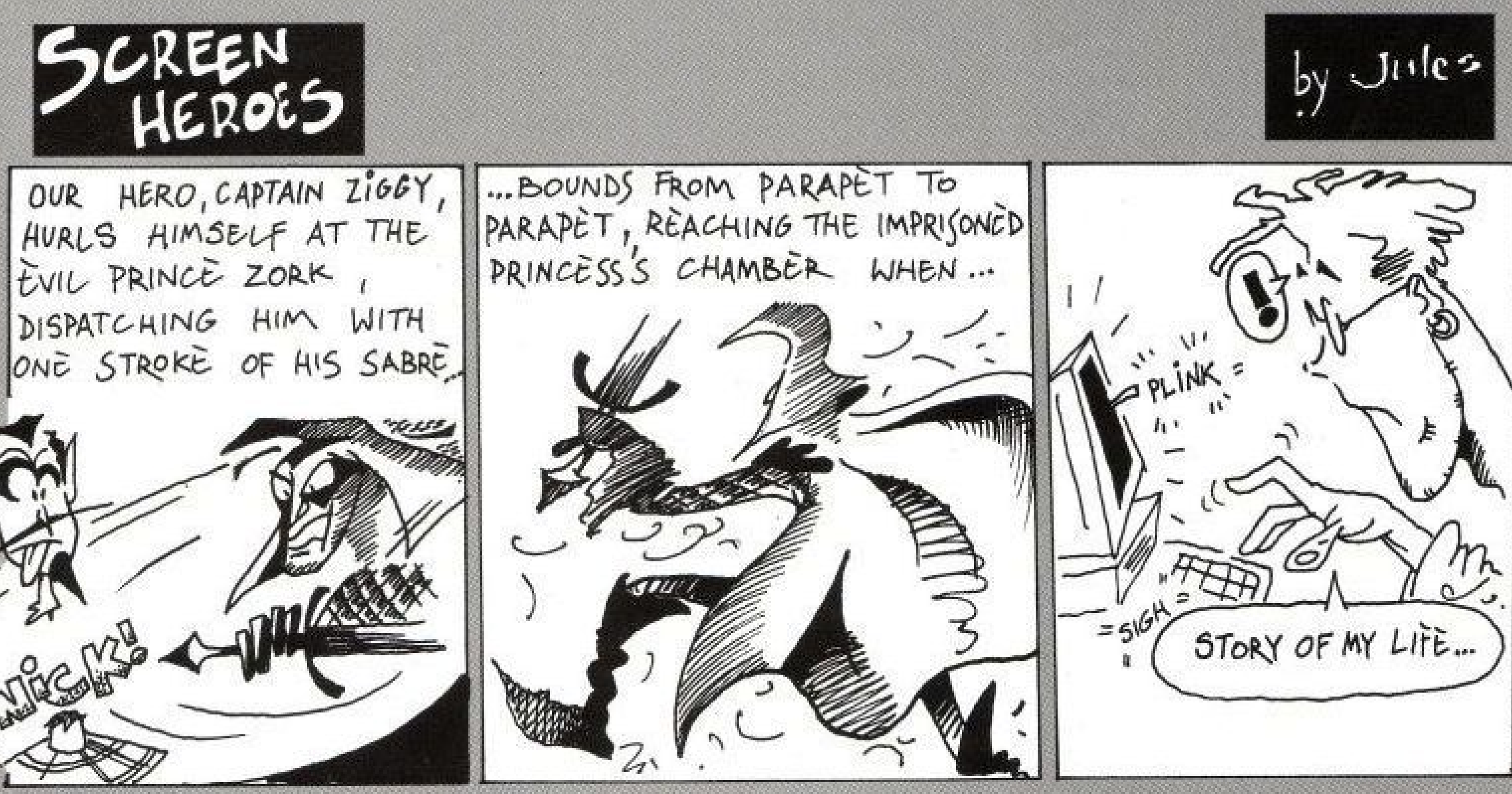


Wait for it! Look through the list of names below and you'll find out if you are one of the ten fabulously lucky people who have won a super Spidey goody bag, courtesy of Entertainment International.

As you know, Spidey's a popular fellow, so we're sorry we couldn't give prizes to the thousands of you who entered, but you never know, your luck could be in with this month's superb ACU competition on page 10.

Now, without further ado, to the winners: Thomas Huns of Burton Joyce, Nottingham; Nicholas Jones of Sevenoaks, Kent; David Jones of Shrewsbury, Shropshire; Paul Crofts of Smethwick Warly, West Midlands; Rob Melhuish of Madehurst, West Susssex; James Waite of Eastbourne, East Sussex; Stuart Nicol of Bicester, Oxon; Crawford Orr of Blackpool, Lancs.; Simon Gibson of Stoke-on-Trent, Staffs. and Matthew Broad of Swanley, Kent.

Keep your eyes on the post for your goody bags, folks.



ZIGGY'S MAILBOX

STAR BLUES

I feel that I must tell you about the escapade that I have recently undergone. All of this arose from me wanting to buy a new colour printer.

After uncountable phone calls to various companies that advertise in your magazine, I find myself printerless.

Please can you help me in seeking my goal of owning a Star LC200 colour printer by giving a list of places that have captured this creature.

K.Bremner, Ross-Shire, Scotland. (An exhausted printer hunter).

Ziggy:First off, the Star LC200 is a pretty hot item at the moment, so it's not surprising they are in short supply. Why not stroll down to the High Street and try ordering one from your nearest computer/electrical dealer. Alternatively, give Star a ring on 071 840 1800 and try to get one from horse's mouth, so to speak.

COMPILATION CORRUPTION

I was given the compilation 'Mindstretchers' for a CPC on disk. When I came to play it, it was really quite weird.

I started by playing Monopoly and the game suddenly gave me all the main places and put hotels on all of them. Then, on Cluedo, it just ran straight through without letting me do anything.

Scrabble seemed to play as it was supposed to. Can you tell me why two of the games were broken and one was ok? Surely, if the disk was faulty, the entire compilation would be faulty. Please print this letter just in case anyone else is having the same problem.

David Rafferty, Lanchester, Co. Durham.

Ziggy: It ain't necessarily so, as they say, David. Most games on a compilation disk are stored independently of each other, normally linked only by the loading sequence. As long as the loading sequence is in order, there should be no reason why a code corruption on one of the games should affect the others. Fair enough? By the way, if your game is dodgy, send it back and make sure you get a good one back, if you haven't done that already.

SIZING UP

I have a CPC 6128 with loads of discs in my disc box and I am getting fed up with rumbling through them. I was looking through the March edition of ACU and saw that 800K could be made out of a 3.5 inch disc and was wondering if the same could be done on a 3 inch disc. If there is such a device, could you please tell me?

Mark Atkins, High Wycombe, Bucks.

Ziggy:'Fraid not Mark, a 3 inch disc just won't handle that kind of pressure, unfortunately. The only way forward is to get yourself a 3.5 inch drive from somebody like Siren, with either Ramdos or Romdos, giving you that extra oomph in your memory capacity.



PLUS PROBLEMS

As a CPC464 user, I was very happy to replace my machine with the 464+, due to a breakdown. On receiving the machine and setting it up, it came to my attention that the output socket for my printer was different.

Have they done this deliberately so that we have to buy new leads? Also, can you tell me which joystick will work on the 464+, as mine will not work now and I do not like the one they provided with the machine?

J.D.Kostilek, Burnley, Lancs.

Ziggy:Well, the idea behind the new output socket is to make it a little more mainstream compatible with most computer leads and peripherals, rather than the old CPC dedicated leads. Trying, I agree, but there you go. As for the joystick problem, there is a slight difference in the wiring set-up on the new machines and, to be fair, your best bet is to get down to your local Amstrad stockist and ask to try out all your favourite joysticks in the shop on the new machines to see which will work and which won't.

CONSOLE CRAZY

How many of your readers, I wonder, are experiencing the same difficulty as my son in getting Amstrad games on disk and cartridge? Disks seem to be nearly unobtainable. Indeed, our local computer shop informed him that they had stopped stocking them altogether. As for cartridges, where are all the titles Amstrad promised us and where do we get them from? The only outlet seems to be Dixons, but they have precious few in stock, whilst one other large chain store seemed unaware that such things even existed (indeed, the assistant we asked seemed to think they were pocket games!)

If it is the case, as I have seen printed elsewhere, that the dearth of cartridges is a result of Amstrad themselves holding a monopoly on production, and then not getting the titles out on time, I feel that they are not only letting their customers down, but also alienating them. My son is thoroughly disenchanted with Amstrad now, and, having saved up for some considerable time to buy a new 6128+, he is beginning to wish he had bought an Atari ST instead, even though he would then have been unable to use all the CPC games he has collected over the years. It is to be hoped that Amstrad will either get their act together quickly, or better still, allow other software houses to produce cartridges to fit the new range.

Turning to the disk problem, it is perhaps more up to Amstrad users to get out into the software shops and let them know that there is a market for disk based games. Whilst the retailers may not understand the advantages of Amstrad machines over their rivals, they will understand profit and, if they think they are missing out, then they will rethink their stocking policies.

Barry Marsden, Slough, Berkshire.

Ziggy: Very pertinent points indeed Barry. Despite the fact that budget priced cassette games now have a pretty strong hold on the Amstrad games market, most of the big name software houses are still producing disc based games on a regular basis.

As you know, most service industries are not enjoying the current recession, which may account for some products being a little slow off the mark.

However, as you rightly put it, it really is a matter of users creating a demand and making retailers aware of that demand. Many high street computer outlets still stock their fair share of disk games, so as long as they sell, they'll keep stocking them.

On the cartridge front, things do seem to have been a trifle slow in coming forward, but we at ACU are assured that this situation should soon recitfy itself, with more and more titles becoming available over the next few months.

Unfortunately, it really is a matter of patience until the recession moves along and puts more money back in circulation, allowing the wheels of industry to start turning properly again.

BB CRASH

As a regular subscriber to your magazine, I have read numerous references to the infamous Maxwell House bulletin board. Not having had a modem, I have just had to sit back and believe all of the wondrous stories I heard about it. However, after saving up my hard-earned dosh, I recently equipped myself and prepared for my first foray into the unknown, only to find myself looking at a blank screen and no material to leaf through. What happened? Am I going about it the wrong way, or does the fabled House not exist on this ethereal plane?

Ken Parsons, Preston, Lancs.

Ziggy:Alas, alack, our board did have a nasty accident some time back, which could account for your nasty blackout. 'Tis the way with these things you know, but after some serious medication, Maxwell House is well and truly back in order and should be ready to receive at all times. Have another go and you should be pleasantly surprised.

MAXI NEWS

I would like to bring to your attention a program by the name of MAXIDOS, which is currently sold by Microstyle (who advertise in your magazine regularly), originally distributed by Nemesis.

It was first forwarded for review approximately one year ago. I appreciate that your magazine has a lot of software to review each month and there may be a delay in assessing such software, but as the author of the program, I am deeply disappointed to see that not only has the program been overlooked for review, but it also hasn't been mentioned in the news section, even though a similar program by the name of NIRVANA has had several mentions in your pages.

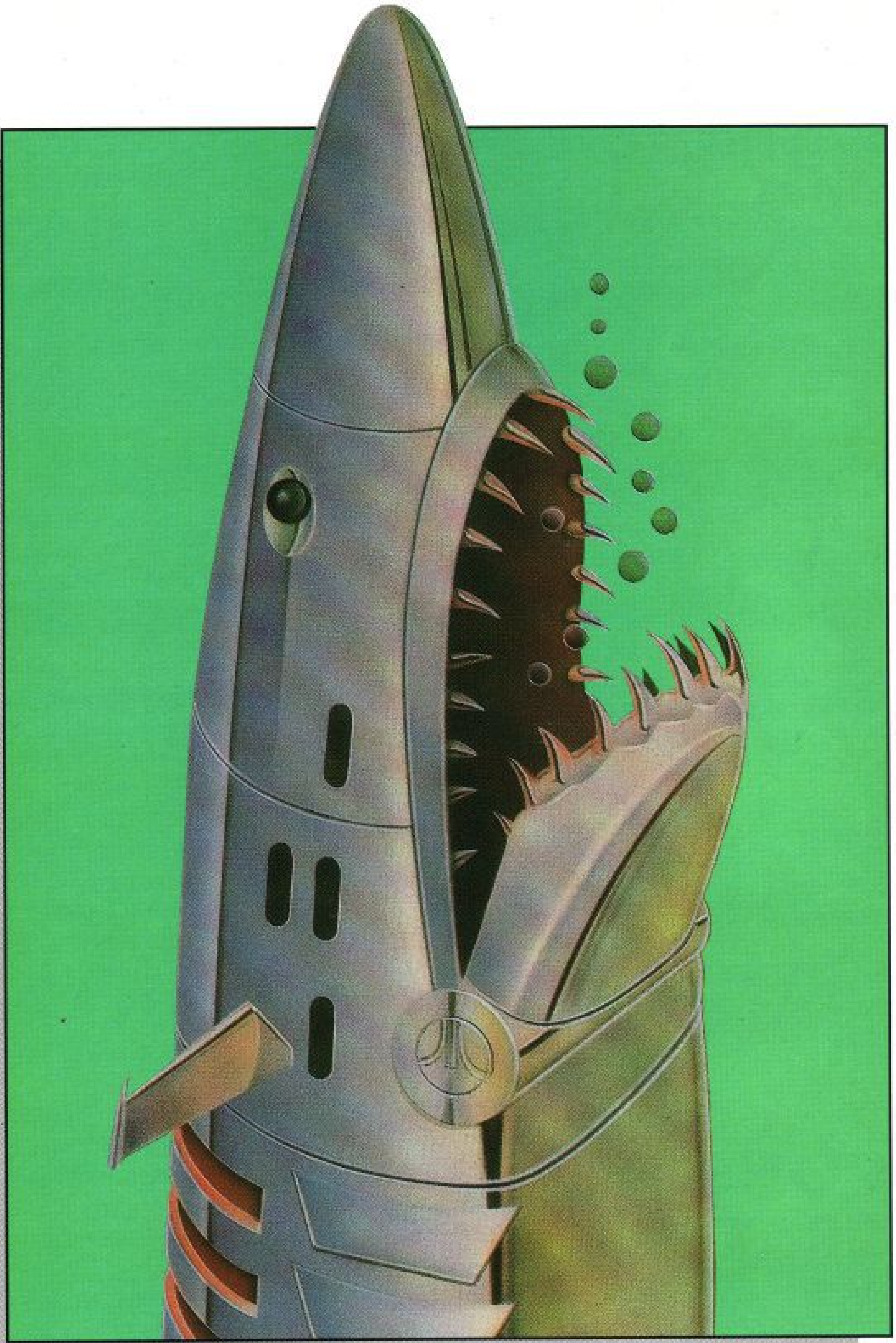
I am not trying to pester you for free publicity, but would be very grateful if you could treat the program fairly and offer the readership of ACU your opinion on it.

I hope you agree that this can only be a reasonable request.

Kevin McCaughey, Liverpool.

Ziggy:Reasonable indeed. There's your mention (only joking!) Firstliy, your program must have been overlooked by our newshounds at the time, whilst fresh material since then may have taken procedence. However, what with the many new and younger readers coming to ACU, our present policy is to undertake a fresh look at many of the older products on the market, which may not have come to their attention, whilst continuing to look at fresh products. As a result, a quick phone call to Phil at Microstyle should rectify the situation and your excellent program will no doubt be given the once over in the near future. Fair enough?

COMPETITION



Just when you thought it was safe to go back in the water, along came Domark and filled it up with hordes of sub-aqua nasties in Thunder Jaws, just to spite us. Anyway, to make you feel a little safer, you can now get hold of your very own huge inflatable shark to protect you.

In fact, ACU is giving away ten of these fantastic prizes to the ten best drawings of futuristic cyber sharks sent in.

So, if you want to get hold of one of these huge prizes, get your crayons out and get your entries in on the double to:

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O.J. SOFTWARE

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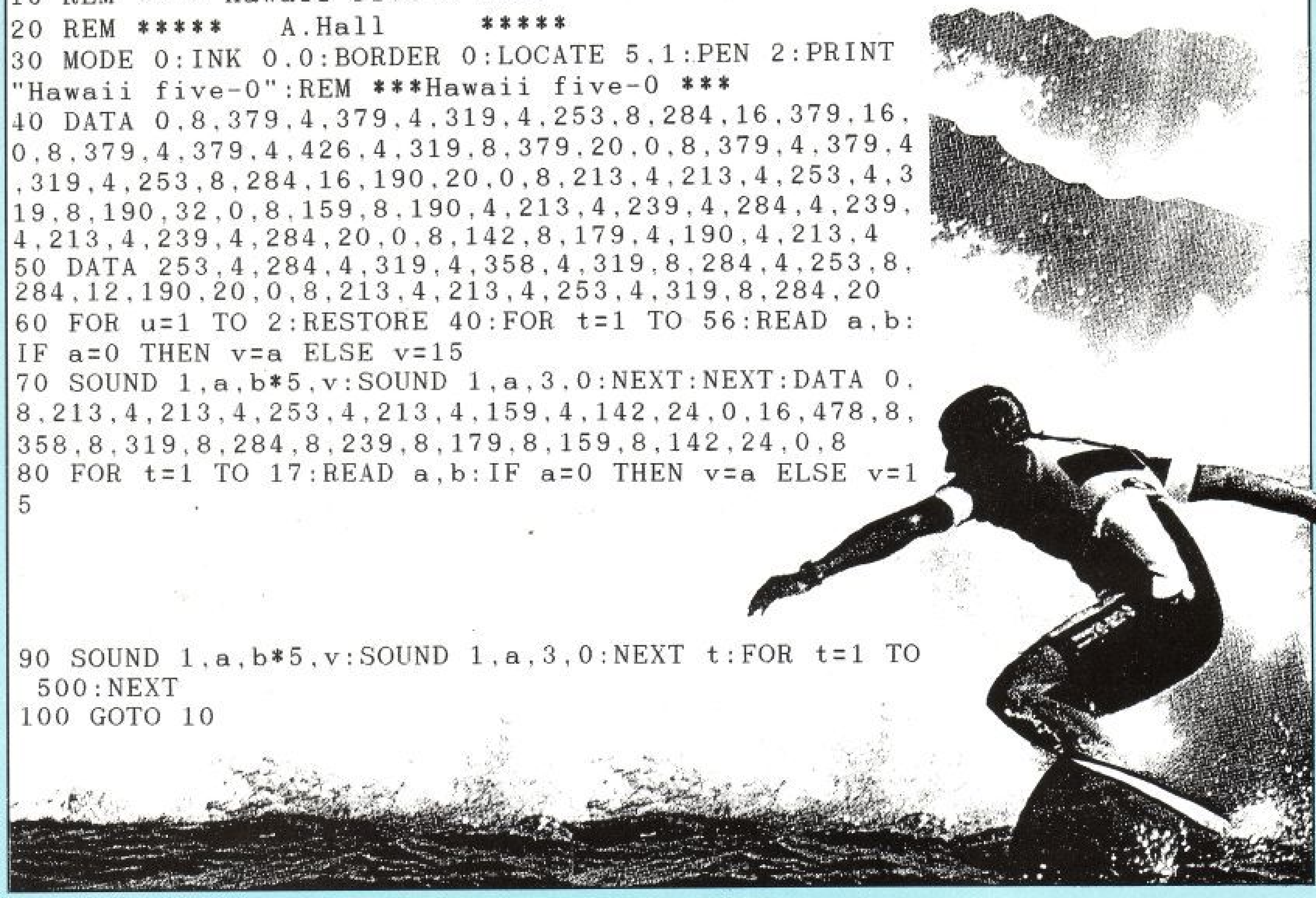
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HAWAII FIVE-O

By Adrian Hall

This clever music demo is exactly what it says; a faithful Arnold reproduction of that classic theme tune for your delectation. As they say, if you're not satisfied with it, then "Book him Danno. Murder one!"

```
10 REM **** Hawaii five-0 ****
20 REM *****    A.Hall      *****
30 MODE 0:INK 0,0:BORDER 0:LOCATE 5,1:PEN 2:PRINT
"Hawaii five-0":REM ***Hawaii five-0 ***
40 DATA 0,8,379,4,379,4,319,4,253,8,284,16,379,16,
0,8,379,4,379,4,426,4,319,8,379,20,0,8,379,4,379,4
,319,4,253,8,284,16,190,20,0,8,213,4,213,4,253,4,3
19,8,190,32,0,8,159,8,190,4,213,4,239,4,284,4,239,
4,213,4,239,4,284,20,0,8,142,8,179,4,190,4,213,4
50 DATA 253,4,284,4,319,4,358,4,319,8,284,4,253,8,
284,12,190,20,0,8,213,4,213,4,253,4,319,8,284,20
60 FOR u=1 TO 2:RESTORE 40:FOR t=1 TO 56:READ a,b:
IF a=0 THEN v=a ELSE v=15
70 SOUND 1,a,b*5,v:SOUND 1,a,3,0:NEXT:NEXT:DATA 0,
8,213,4,213,4,253,4,213,4,159,4,142,24,0,16,478,8,
358,8,319,8,284,8,239,8,179,8,159,8,142,24,0,8
80 FOR t=1 TO 17:READ a,b:IF a=0 THEN v=a ELSE v=1
5
90 SOUND 1,a,b*5,v:SOUND 1,a,3,0:NEXT t:FOR t=1 TO
 500:NEXT
100 GOTO 10
```



TEXT SCROLL

By Adrian Hall

Similar to last month's Omega Scroll, this nifty proggie allows you to introduce your own text in the form of a scrolling message at the bottom of the screen. Just follow the simple instructions and your programs need never be boring again.



```
10 REM scrolling text
20 REM by Adrian Hall
30 a=38:m=1:b=1:CLS:LINE INPUT a$:CLS:a$=a$+" "
40 MOVE 0,0:DRAW 0,50:DRAW 639,50:DRAW 639,0:DRAW
0,0
50 LOCATE a,24:PRINT MID$(a$,m,b):a=a-1
60 IF m=LEN(a$) THEN a=38:m=1:b=1:GOTO 50 ELSE IF
a=3 THEN m=m+1:a=a+1:FOR t=1 TO 100:NEXT:GOTO 50 E
LSE b=b+1:FOR t=1 TO 100:NEXT:GOTO 50
70 CLS:RUN
80 ' *** IF you don't like the square box - delete
 line 40 ***
90 ' *** message stored in a$ ***
```

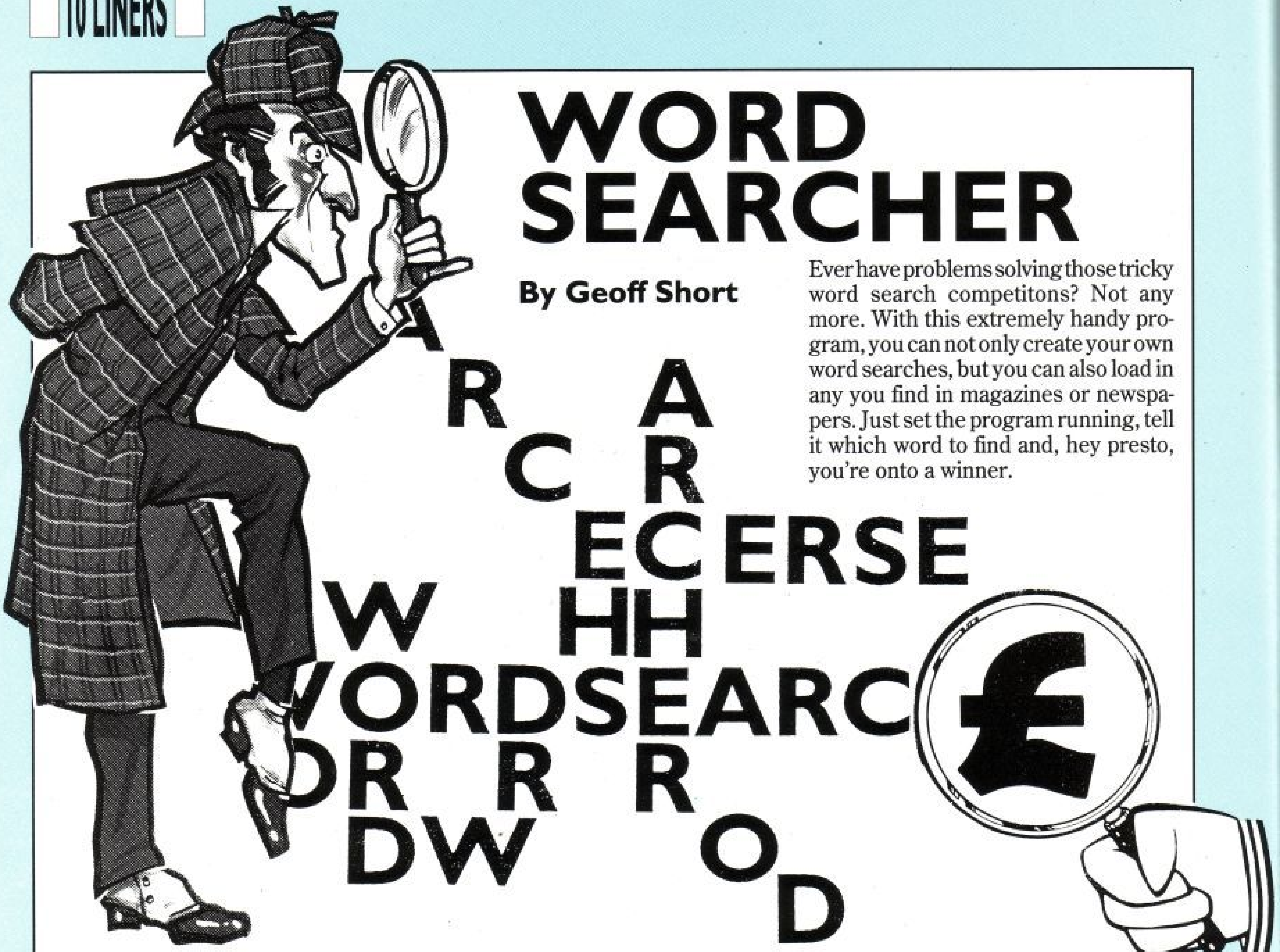
ANIMATOR

By John Orrell

You won't believe your eyes when you run this superb graphics demo. Run it, watch the screen divide into nine segments, each with its own display, and then see it animated to round off a stunning little proggie. As Mr Orrell himself says, show this to a C64 or Speccie freak and then tell them it took only 10 lines of BASIC. Green with envy or what!



```
1 MODE 0:DEG:CALL &BC02:FOR x=0 TO 639 STEP 640/3:
PLOT x,0,15:DRAWR 0,399:NEXT:PLOT 639,0:DRAWR 0.39
9:FOR y=0 TO 399 STEP UNT(400/3):PLOT 0,y:DRAWR 63
9,0:NEXT:c=1:FOR x=8 TO 200 STEP 4:PLOT 8,270,c:DR
AW x,394:PLOT 200,270:DRAW 212-x,394:PLOT 8,394
2 DRAW x,270:PLOT 200,394:DRAW 212-x,270:GOSUB 9:N
EXT:ORIGIN 220,270,220,416,394,270:x=98:y=62:FOR r
=2 TO 120 STEP 4:i=c:h=r:v=r:GOSUB 10:NEXT:ORIGIN
436,270,436,630,394,270:m=1:FOR r=60 TO 10 STEP-5:
FOR n=0 TO 359 STEP 5:PLOT 98,62,c
3 DRAW 94+(r*m)*COS(n),62+r*SIN(n):GOSUB 9:NEXT:m=
m+0.3:NEXT:ORIGIN 0,0,0,639,0,399:FOR r=359 TO 0 S
TEP-5:x=108+48*COS(r):y=200+40*SIN(r):i=c:h=20:v=2
0:GOSUB 10:NEXT:FOR x=436 TO 630:PLOT x,200+64*SIN
(n),c:PLOT x,200+64*COS(n\2),c:n=n+5:GOSUB 9:NEXT
4 FOR n=0 TO 360 STEP 4:PLOT 110+80*COS(n),65+60*S
IN(n),c:DRAW 110+80*COS(n+200),65+60*SIN(n+200):GO
SUB 9:NEXT:c=0:FOR n=-80 TO 80 STEP 8:PLOT 312,128
,c:DRAW 312+n,68:DRAW 312,4:GOSUB 9:NEXT:FOR n=80
TO -72 STEP -8:PLOT 316,128,c:DRAW 316+n,68
5 DRAW 316,4:GOSUB 9:NEXT:FOR n=20 TO 60 STEP 4:FO
R n2=0 TO 360 STEP 4:PLOT 536+n*COS(n2),66+n*SIN(n
2),c:GOSUB 9:NEXT:NEXT:c=10:FOR n=359 TO 0 STEP-8:
PLOT 536,66,c:DRAW 536+60*COS(n),66+60*SIN(n),c:GO
SUB 9:GOSUB 9
6 NEXT:RAD:FOR m=0 TO 54 STEP 0.2:PLOT 536,66,14:D
RAW 536+30*COS(m),66+30*SIN(m):NEXT:PLOT 518,72:DE
G:PLOT 526,76,0:DRAWR 0,-2:PLOT 546,76:DRAWR 0,-2:
PLOT 516,66:FOR n=-180 TO 0 STEP 5:DRAW 536+20*COS
(n),66+20*SIN(n):NEXT:ORIGIN 220,136,220,416,262,1
36
7 x=96:y=20:FOR h=0 TO 140 STEP 5:i=c:v=h/5:GOSUB
10:NEXT:yi=20:yic=5:y=55:FOR ri=-30 TO 30 STEP 5:c
=INT(RND*9)+1:FOR z=0 TO 240 STEP 2+(RND*4):PLOT (
96-ri)+ri*COS(z),y+(40+yi)*SIN(z),c:GOSUB 9:NEXT:y
i=yi-yic:IF yi<-5 THEN yic=-yic
8 NEXT:y=20:FOR x=92 TO 100:PLOT x,y,13:DRAW x,50:
NEXT:x=96:y=50:i=13:a=6:FOR r=1 TO 3:v=r:h=v*5:GOS
UB 10:NEXT:INK 15,6:INK 14,15:INK 13,20:BORDER 0:I
NK 0,0:WHILE-1:FOR i=1 TO 10:INK i,26:INK i-1,0:CA
LL &BD19:CALL &BD19:NEXT:INK i-1,0:WEND
9 c=c MOD 10+1:RETURN
10 PLOT x+h*COS(0),y+v*SIN(0),i:FOR zz=0 TO 360 ST
EP 20:DRAW x+h*COS(zz),y+v*SIN(zz),i:NEXT zz:DRAW
x+h*COS(0),y+v*SIN(0),i:GOSUB 9:RETURN
```



WORD SEARCHER

By Geoff Short

Ever have problems solving those tricky word search competitons? Not any more. With this extremely handy program, you can not only create your own word searches, but you can also load in any you find in magazines or newspapers. Just set the program running, tell it which word to find and, hey presto, you're onto a winner.

```
10 DEFSTR a-m:DEFINT n-z:MODE 1:PAPER 0:PEN 1:CLS:CALL &BC02:BORDER 0:INK 0,0:IN
K 3,18,6:SPEED INK 30,30:e=STRING$(12,154):f=CHR$(151)+e+CHR$(157):PRINT CHR$(15
0)STRING$(25,154)CHR$(158)e;CHR$(156);:FOR p=1 TO 23 [F3]
20 PRINT CHR$(149);TAB(27);CHR$(149)SPC(12)CHR$(149);:NEXT:PRINT CHR$(147)STRING
$(25,154)CHR$(155)e;CHR$(153);:LOCATE 27,8:PRINT f:LOCATE 27,18:PRINT f:PEN 2:FO
R p=3 TO 6:READ e:LOCATE 30,p:PRINT e:NEXT:LOCATE 29,20:PRINT"*END"CHR$(146)" QU
IT" [BA]
30 LOCATE 28,14:PRINT"LAST WORD:":LOCATE 28,10:PRINT"WORD TO FIND":e="G.SHORT 19
91":x=434:y=50:z=0:TAG:FOR p=y-1 TO y-33 STEP-4:ORIGIN x,p,x,639,p,p+2:MOVE 0,z,
1:PRINT e;:z=z+2:NEXT:TAGOFF:WINDOW 2,26,2,24:WINDOW#1,28,39,12,12:WINDOW#2,28,3
9,16,16 [AA]
40 FOR p=0 TO 2:PEN#p,1:PAPER#p,0:NEXT:INPUT"No. of rows (max 23)";y:DIM b(y):FO
R p=1 TO y:PRINT USING"##:";p;:INPUT"",h:b(p)=UPPER$(h):x=LEN(b(1)):v=(LEN(b(p))
<>x):p=p+v:PRINT STRING$(ABS(v),7);:NEXT:CLS:PRINT#1,"Wait...":DIM a(x):FOR p=1
TO x [DA]
50 FOR q=1 TO y:a(p)=a(p)+MID$(b(q),p,1):NEXT q,p:z=x+y-1:DIM c(z),d(z):FOR p=1
TO y:FOR q=1 TO MIN(p,x):c(p)=c(p)+MID$(b(y-p+q),q,1):d(p)=d(p)+MID$(b(y-p+q),x-
q+1,1):NEXT q,p:FOR p=2 TO x [97]
60 r=p+y-1:c(r)=SPACE$(p-1):d(r)=c(r):FOR q=1 TO MIN(x-p+1,y):c(r)=c(r)+MID$(b(q
),p+q-1,1):d(r)=d(r)+MID$(b(q),x-q-p+2,1):NEXT q,p:PEN 2:FOR p=1 TO y:LOCATE 2,p
:PRINT b(p);:NEXT [53]
70 PRINT#2,g:PEN#2,1:INPUT#1,"",g:g=UPPER$(g):IF g="*END" THEN END ELSE h="":s=0
:FOR p=1 TO LEN(g):h=MID$(g,p,1)+h:NEXT:PEN 2:FOR p=1 TO y:LOCATE 2,p:PRINT b(p)
;:NEXT:i=g:GOSUB 80:i=h:GOSUB 80:SOUND 1,400-s*300,50:GOTO 70 [BE]
80 PEN 3:t=1:FOR p=1 TO x:u=INSTR(a(p),i):ON SGN(u) GOSUB 90:NEXT:t=2:FOR p=1 TO
 y:u=INSTR(b(p),i):ON SGN(u) GOSUB 90:NEXT:FOR p=1 TO z:t=3:u=INSTR(c(p),i):ON S
GN(u) GOSUB 90:t=4:u=INSTR(d(p),i):ON SGN(u) GOSUB 90:NEXT:PEN 1:RETURN [CF]
90 IF t=1 THEN FOR q=1 TO LEN(i):LOCATE 1+p,u+q-1:PRINT MID$(i,q,1);:NEXT ELSE I
F t=2 THEN LOCATE 1+u,p:PRINT i; ELSE IF t=3 THEN FOR q=1 TO LEN(i):LOCATE u+q,y
-p+q+u-1:PRINT MID$(i,q,1);:NEXT [02]
100 PEN#2,3:s=1:IF t=4 THEN FOR q=1 TO LEN(i):LOCATE 3+x-u-q,y-p+q+u-1:PRINT MID
$(i,q,1);:NEXT:RETURN ELSE RETURN:DATA "   W"," GEOFF'S","   R",FINDER [77]
```

Keeping Track

John Hudson wraps up his informative foray into CP/M+ with some useful hints for optimum results

When Digital Research developed CP/M Plus, they changed the format of the directory tracks to accommodate the new facilities. But they made sure that CP/M Plus could create and use older format discs by writing a separate program, INITDIR.COM, to make and undo the necessary changes. INITDIR is on side 2 of your CP/M Plus system disc. If you put a blank formatted disc in drive B and enter

INITDIR B:

you will be asked if you want the directory reformatted. If you answer y, INITDIR will go ahead. If it finds the directory already formatted for CP/M Plus, it will ask if you want to reclaim the directory space. If you answer y, it will restore the directory to the old format understood by AMSDOS. Because AMSDOS can only understand the old format, you MUST heed the dire warnings in the manual about never using date-stamped, i.e. CP/M Plus format, discs with AMSDOS.

The new format allows two dates and a password for each file and a name for the disc as a whole. You can also protect your settings on the disc with a further password! You can choose to store either the date you created a file or the date you last used (accessed) it and the date you last updated the file. There isn't room for all three. The file date and time stamps, passwords and protect levels are stored in every fourth directory space. So a floppy disc formatted using INITDIR can only have three-quarters the usual number of entries – 48 on a 178K disc.

To set all these attributes, you use SET on side 1 of your CP/M Plus system disc. If you enter

SET B: [access=on, update=on, protect=on, name= newname]

SET will respond as shown in Figure 1. Substitute 'create-on' for 'access=on' if you prefer to store this date/time stamp. Directory labels take the same form as filenames, eight characters and a three letter extension. In fact, if you use all the characters, CP/M Plus issues an error message but still installs the label correctly – the only 'bug' I have found.

Of course, unless you have the dk' tronics Real Time Clock, all this setting of date stamps won't automatically produce any meaningful results. Mere mortals have to tell CP/M the date and time every time we load CP/M by using DATE.COM. Enter

DATE SET and you will be prompted for the current date (in US format) and the current time after which you are asked to press a key to load the new values into the system clock.

If you use SHOW.COM, you will find that CP/M records the-date you create a label. Enter

SHOW B:[label] and you should see something like Figure 2, if you have already used DATE.COM. Otherwise the date will be in 19821

Once you have put one file onto a CP/M Plus format disc, you will find that DIR B:[full] produces a quite different display (Figure 3). Instead of two columns of filenames, the second column is taken up with information about the CP/M Plus attributes.

'Prot' stands for 'Protection'; if password protection has not been set, this column remains blank; 'None' indicates that, though the two files can be protected, no protection is being given to them.

When you first assign a password to a file, you must normally choose a level of protection; there are four levels READ, WRITE, DELETE and NONE. If you set READ, only password holders can do anything with the file; if you set WRITE, anyone can read the file but only password holders can change it; if you set DELETE, anyone can read or change it but only password holders can rename or delete it. NONE removes all protection.

So, if you wanted to stop anyone seeing SAMPLE.TXT on drive B:, you might enter:

SET B:SAMPLE.TXT [protect=READ, password=JEMIMA]

Thereafter you would have to include the password every time you accessed the file. You can do this by adding a semi-colon followed by the password to the end of the filename. So, for example, if you wanted to display SAMPLE.TXT on the screen, you could enter

TYPE B:SAMPLE.TXT;JEMIMA

If you wanted to change the level of protection, you could enter

SET B:SAMPLE.TXT;JEMIMA [protect =WRITE]

If you wanted to change the password, you could enter SET B:SAMPLE.TXT;JEMIMA [password-ELEPHANT] Alternatively, you could deliberately leave out the password. In this case, CP/M Plus would respond with Password? and wait until you had entered it correctly before proceeding. This might be preferable if someone is looking over your shoulder as CP/M does not show the password on the screen as you enter it. However, you must include the password if you are using PIP and want the copied file to be protected; S0, for example,

A:NEWCOPY.TXT;AUGUSTUS=B: SAMPLE.TXT;ELEPHANT will copy SAMPLE.TXT on drive B to NEW

Figure 1: Screen display after labelling a disc

Label for drive B:

Directory Label	Passwds Reqd	Stamp Create	Stamp Access	Stamp Update
B:NEWNAME .	on	off	on	on

Figure 2: Screen display in response to SHOW B:[label]

Label for drive B:

Directory Label	Passwds Reqd	Stamp Create	Stamp Access	Update	Label Created	Label Updated
B:NEWNAME .	on	on	on	on	12/23/90 19:35	12/23/90 19:35

COPY.TXT on drive A adding the password AUGUSTUS provided protection is already ON for the disc in drive A. The protection level is automatically set to READ and you will have to use SET if you want to change it.

If you want to remove protection from a file, you simply set protection to NONE. If you want to remove all passwords from a disc, you enter

SET B:[protect=off]

To stop anyone else doing this, you can protect the settings on your disc with, for example,

SET B: [password= GEORGE]

This will prevent anyone who does not know the password from changing any of your settings. In this case, there are no levels; protection is absolute! It does not stop people from using unprotected or partially protected files in accordance with your settings. They simply cannot change your settings.

Using password protection is relatively easy if you have a program written with CP/M Plus in mind. But most of the well-known programs, like WordStar, dBASE and Supercalc, were written before CP/M Plus was developed and, if you give them a password, they will either ignore it or throw up an error message. In any case CP/M Plus will stop them accessing the file and, if you proceed, you could get into all sorts of trouble if you try and create a new file with the same name as one already on the disc.

CP/M Plus offers a way round this. If you have given all the files on the disc the same password, e.g. REGENCY, with

SET B:*.*[protect=READ, password= REGENCY] you can then enter

SET [default=REGENCY] before loading the program you want to use. Then, whenever the program tries to open a file without providing a password, CP/M checks whether the password assigned to the file matches the default and, if it does, allows the program to proceed.

As with the attributes 'Sys' and 'RO' dealt with in an earlier piece, the protection level and password may not be transferred to new files created by a program which does not understand passwords and cannot therefore include them in the filenames of any new files it creates. So, at the end of the session you may have to re-enter

SET B:*.*[protect=READ, password= REGENCY] to restore password protection to all files.

I have tried to show that there is more to a file than its filename; when CP/M and AMSDOS search for a file on a disc, they are not only looking for a file with a certain filename, they are also looking for a file with certain 'attributes', for example, a particular user number, 'Dir' and 'Read/Write' status. So when CP/M says 'No file' or 'File Not Found', it doesn't always mean that there is no file with that filename on the disc; it may mean 'there is no file on the disc with that name and the attributes I expect to find'. Like all operating systems, CP/M is programmed with certain assumptions about what are reasonable operations for it to carry out. If you want it to do something with a 'Sys' file or over-write a 'Read Only' file, CP/M expects you to tell it so explicitly. Like a good security manager, it may stop you or put up a facade of incomprehension if you try something without the necessary authorisation.

At the start of this series, I described CP/M Plus as 'one of the best operating systems for microcomputers'. In spite of its occasional perversities and unhelpful messages, CP/M Plus deserves the accolade for its handling of 'Read Only' files, for encouraging the separation of programs in the system area from data in the various user areas, for its password protection and for its unobtrusive date and time stamping and archiving of files.

If you want similar helpfulness and flexibility on a 16-bit machine, you will have to turn to CDOS or DR DOS, both from Digital Research, the developers of CP/M Plus.

One of the joys of CP/M Plus is the intelligent way it handles directory listings, using multiple columns wherever possible. It only reverts to one file to a line in response to DIR [full] or DIR [user=all] when listing files on a CP/M Plus formatted disc.

However, because CP/M Plus normally prints 20 lines at a time on the screen and then waits for you to press <return>, it can be difficult to view all the filenames on a disc at once. If there are just over 20, you can ask for a continuous listing by using SETDEF.COM on your CP/M Plus system disc. Enter

SETDEF [noPage]

and you may be able to see them all on a single screen. Otherwise, the easiest way to get a full listing is to print it out by turning your printer on and pressing <control-P> at the right point. If you enter

SETDEF [nopage]

DIR B:[user=all] <control-P>

you will get a complete directory listing on your printer. When the printer stops, enter <control-P> to stop it echoing the screen. To return your screen display to normal, enter

SETDEF [Page]

Figure 3: Output of DIR B: [full] for a CP/M Plus formatted disc

Scanning Directory...
Sorting Directory...
Directory For Drive B: User 0

Name	Bytes	Recs	Attributes	Prot	Update
DIRFULL TXT	1k	2 Dir RW	None	12/23/90 19:36	12/23/90 19:36
LABEL TXT	1k	2 Dir RW	None	12/23/90 19:35	12/23/90 19:36

Total Bytes = 2k Total Records = 4 Files Found = 2
Total 1k Blocks = 2 Used/Max Dir Entries For Drive B: 4/ 64

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Pokes & Arrows

Vax gets down to Sherwood Forest, to give Robin Hood the going over, in his latest box of tricks

Hi again, folks and folkesses. Welcome to Hack City, Arizona (population 54¾). Home of the keypoke, hackette, pokeykins and sell-by soup. Okay, forget the sell-by soup. I didn't mean to upset anyone's digestive system

Any way up, here we have the Amazing Andrew Price writing in again with some pokey bits for all you wonderful people out there, and some of the not-so-wonderful ones who are only borrowing this magazine and not paying for it.

Young Andrew has some very nice code he sent in which allows you to make backup copies of ACE from the Elite Hit Pak. Now due to some silly things called laws, which aren't my idea but are backed up by thugs with heavy weaponry, I can't actually publish the pokette. This doesn't mean that I can't tell you to read in the cassette header, reset the protect bit, and write it out again, but it doesn't help.

I do have to be careful what I write, you know. I have a reputation to acquire.

Much more useful, and in a heat-and-serve form, is this pokette for Super Robin Hood. It makes Robin move like someone has slipped red-hot coals in his doublet and hose, while giving him the armour protection of an M1A1 tank. Have at thee, varlet:

```
10 REM SUPER ROBIN HOOD
POKES (v2)
20 REM BY ANDREW PRICE FOR A
C U
30 MEMORY &2000
35 check=0
40 FOR addr=&BE3F TO &BE89
50 READ a$:pok=VAL("&"+a$)
55 check=check+pok
60 POKE addr,pok:NEXT addr
65 IF check<>&2707 THEN 66 ELSE
70
66 PRINT"WOAH SIRE, DATA
ERROR!":STOP
70 CALL &BE3F
180 DATA CD,37,BD
190 DATA AF,3C,CD,6B,BC,06
200 DATA 00,11,00,AC,C3,72
210 DATA BE,EB,CD,83,BC,23
220 DATA E5,C3,78,BE,21,5F
230 DATA BE,22,92,AC,C9,AF
240 DATA 32,22,61,3E,C9,32
250 DATA 97,6C,3E,00,C3,7E
260 DATA BE,C3,D0,76,6A,C9
270 DATA CD,77,BC,C3,4F,BE
280 DATA CD,7A,BC,C3,58,BE
290 DATA 3E,07,CD,5A,BB,AF
300 DATA 00,C3,6D,BE,C9,00
```

Next on the conveyor belt tonight: A Ranarama rearrangement to reach two runes rather than a risky eight. What with infinite lives this is easier than faarrrgh! Sorry, fell off my log.

```
1 ' RANARAMA CHEAT - TAPE
2 ' by Andrew Price for ACU
3 ' inf energy & easy runes
10 MEMORY &3000
20 FOR ad=&BE00 TO &BE45:READ
a$
30 a=VAL("&"+a$):c=c+a:POKE ad,a
40 NEXT:IF c<>&1D26 THEN
PRINT"check data!":STOP
45 LOAD"!RANA":LOAD"!":CALL
&BE00
50 DATA AF,21,00,9A,E5,01,00
60 DATA 02,C5,3E,EE,AE,77,23
70 DATA C1,0B,78,B1,C2,08,BE
80 DATA 21,37,9A,3E,C3,77,23
90 DATA 3E,29,77,23,3E,BE,77
100 DATA 3C,21,1E,9A,E3,E9,AF
110 DATA 21,65,65,77,21,91,79
120 DATA 77,23,77,23,77,ED,5F
130 DATA C3,B5,5A,41,2E,50,52
140 DATA 49,43,45,DD,AE,01,C9
```

Druids are ok, but if you get on the wrong side of one, he can rune your entire evening.

Oh no! Harrier Attack. I remember this when it was on a Spectrum (spit!), and it was played to death then. Still, here is your chance to poke a game that has been poked more times than Jet Set Willy. Ahh, the nostalgia, it's something you can never wossname, isn't it?

```
10 ' Harrier Attack Pokes (v2)
20 ' by Andrew Price
30 ' Amstrad Computer User
40 MEMORY &7FFF:LOAD"!harier
attack",&8000:LOAD"!harrier
attack",&8A00
50 MODE 2:INPUT"straight down
bomb";y$:IF LOWER$(y$)="y" THEN
POKE &8BA3,0
60 INPUT"new easier level";y$:IF
LOWER$(y$)="y" THEN POKE
&A0C4,0
70 INPUT"enemy planes";y$:IF
LOWER$(y$)="n" THEN POKE
&A618,0
80 INPUT"STOP ALL ENEMY";y$:IF
LOWER$(y$)="y" THEN POKE
&A538,0
90 INPUT"constant full speed";y$:IF
LOWER$(y$)="y" THEN POKE
&A7BE,0
100 INPUT"eject and still be in control
of plane";y$:IF LOWER$(y$)="y"
THEN POKE &9123,&56
110 INPUT"plane engine fx off'";y$:IF
LOWER$(y$)="y" THEN POKE
&A88E,0
120 POKE &A53B,0:POKE
&A6CE,0:POKE
&A6CF,0:PRINT"YOU HAVE INF'
MISSILES, BOMBS AND FUEL AS
WELL!":FOR T=1 TO
1200:NEXT:CALL &9111
```

Like Andrew says, you get fast-fall bombs, easier levels, no enemy planes, no ak-ak (or Triple-A as they call it in these enlightened days), pedal to the metal all the way, and eject with remote control of the aircraft. Oh yes, more missiles, bombs and fuel than a fleet of B52s.



Nocturnal habits,
hairy body, short legs and
a pechant for eating insects.
Yup, definitely going batty, which is just as well, 'cos that's where this poke is going:

```
1 ' Batty Pokes - Hit Pak Tape
2 ' by Andrew Price
3 ' infinite lives
10 MODE 0:OPENOUT"AP":MEMORY &BAF:CLOSEOUT
20 PRINT"LOADING...NO PICTURE"
30 LOAD"!A",&4268
40 LOAD"!B",&BB0
50 POKE &4518:' INFINITE LIVES
70 CALL &4268
```

Just gives you infinite lives, which is just as well as bats are having a hard time of it at the moment.

Amstrad Computer User wishes to point out that it is not advisable to randomly consume insects. Bats have been doing it a long time, and know what they're playing at. All insects should be free from parasites, freshly killed, non-toxic, not at all hairy, well cooked, eat organic vegetables, and preferably want to be eaten. If you are in the slightest doubt, please consult a fully-qualified chef, dietician or psychiatrist. Thank you for your attention. Get on with it, Hairy.

Right, now on to Andrew's one and only disc game of the month. Cybernoid II. I know we've done it before, but with this one you can chop out the bits you don't want without the poke going splut all over the place. The two main things it gives are invulnerability, no enemies, and .. hang on, three things. It's three main features are invulnerability, no enemies, infinite lives, and a fanatical devotion to the Pope. Oh blast it, you work it out:

```
10 ' Cybernoid II Cheat - DISC
20 ' by Andrew Price for ACU
30 LOAD"DISC
40 ad=&A5A9
50 READ a$:IF a$="VAX" THEN 190
60 a=VAL("&"+a$)
70 POKE ad,a:ad=ad+1:GOTO 50
80 ' DELETE AS YOU WISH
90 ' infinite goodies
100 DATA AF,32,2F,16
110 ' aliens dont shoot back
120 DATA 3E,C9,32,DA,28
130 ' no aliens
140 DATA 3E,C9,32,A4,38
150 ' invulnerability
160 DATA 3E,C3,32,0C,2B
170 ' DONT DELETE VAX!
180 DATA C3,00,01,VAX
190 CALL &A410
```



Nebulus - from the german, *Nebel* meaning fog. Also a disc game much hacked by Andrew Price, who ran out of memory while hacking it. 464 memory, that is. Consequently, you get computerised mould growing on the loading screen, but this goes when your infinite lives appear. Just help the poor pokeykins along by fast forwarding past the first file. It's called NEBULUS.BIN, and you can find its end with the CAT command. Type and enjoy:

```
10 ' Nebulus cheat - TAPE
20 ' by Andrew Price for ACU
30 FOR A=0 TO 15:READ B:INK A,B:NEXT
40 DATA 00,02,10,13,09
50 DATA 06,11,20,12,03
60 DATA 26,15,10,24,20
70 DATA 18
80 MODE 0:BORDER 6
90 FOR ad=&40 TO &76:READ a$
100 a=VAL("&"+a$):POKE ad,a:NEXT
110 CALL &40
120 DATA 21,00,C0,11,00
130 DATA 40,3E,87,CD,A1
140 DATA BC,21,00,01,11
150 DATA 00,80,3E,87,CD
160 DATA A1,BC,21,00,C0
170 DATA 11,54,3B,3E,87
180 DATA CD,A1,BC,F3,AF
190 DATA 32,EF,C4,32,C7
200 DATA C4,11,00,81,01
210 DATA 54,3B,21,00,C0
220 DATA ED,B0,C3,00,01
```

That one is what some of my friends would call "Kinda rad." One day I'll figure out what they mean. Sadly though, that's all for this month, and I can see the end of the column looming on the horizon. Next month we'll have pokes by whoever would like to send them to me. Until then, Andrew gets all the cookies.

I'll leave you with this thought: How many Iraqi's does it take to change a lightbulb? Two hundred. One hundred to rebuild the power station, ninety-nine to rebuild the power lines, and one to smuggle the lightbulb in from Jordan.

Love and eternal peace, Vax 'n' Co.

Another crop of arcade goodies brought to you this month, hot off the factory floor. Atari go on the Rampage, GP Rider gets an in-depth look and Sega create a new word for throwing up. John Cook gets down.

Good grief! Is it Summer already – says he emerging from the depth of an arcade first entered sometime in January. Traditionally a good time for the operators, it seems times are still a little bit hard, with the punters' loose change not being quite as loose as it normally is and staying firmly in the pockets.

Partly because of the Recession I guess and partly because many of the games on offer right now are a little bit uninspired, to say the least. After all, what really new innovation can you think of that's hit the arcades in the past three years? OK – the R360, Sega's wonder machine that spins you around and upside-down while playing G-Loc. But that costs £70,000 for the operator

COMBAT ZONE









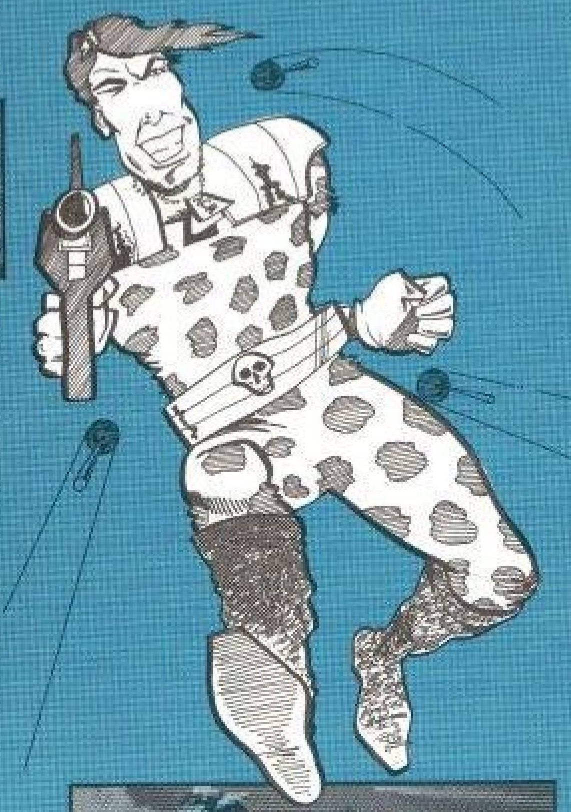
to buy and consequently, a whopping £3 a go if you play it at the Trocadero, London. Still worth it for the experience, but, as they say when hit over the head with a spiked stick, "Ouch!"

Don't worry, 'though. Things are going to get better – and fast – all because of a game system called Virtuality. We covered this in ACU a few months back – it's a Virtual Reality coin-op that you play by wearing a headset that puts you right in the middle of the game, instead of just looking at a flat screen.

Virtuality had its World Launch at the Wembley Conference Centre this very week, as I write, and has made an immediate meteoric impact on the arcade industry. Already out on a few sites around the country, try it if you see it – you'll never want to play ordinary vids again. More about the Virtuality games themselves next month.

Meanwhile, Atari have had another of their funny turns and produced a game that defies all the normal rules of game design and flouts most coin-op conventions that I can think of. Now that doesn't necessarily make it a good







game, but it's certainly different!

Called Ramparts, it's – wait for it – a combination of Missile Command, Tetris and Defender of the Crown. Weird or what! The scam is this. You have a castle, shown in plan view, and play against either the computer (in which case you fight invading computer controlled ships) or up to two other human players, who will also have castles.

You get to place cannons – three to start off – in your castle, then it's into the firing phase, where you must use a trak ball to zap the enemy castle walls or ships. They'll be doing the same to you.

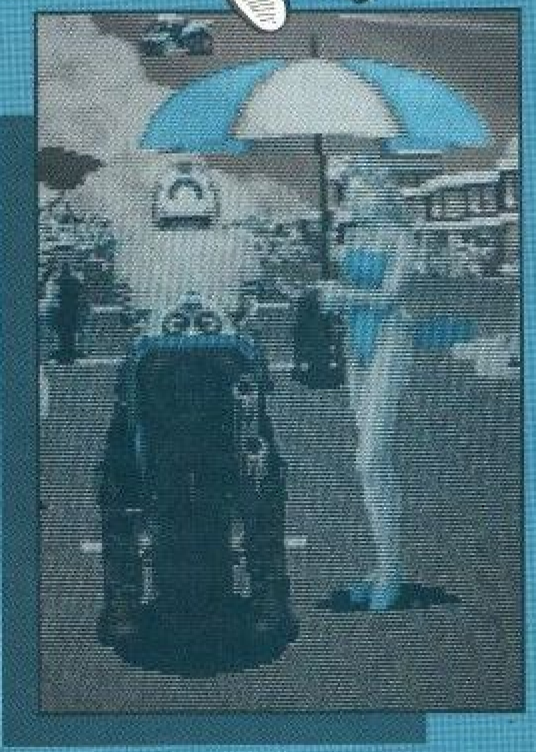
Now into the repair phase. All the rubble is cleared away and you have to use Tetris-style shapes to repair and extend your castle walls. Extend, because the greater the square footage of your castle, the more cannons you get and the more grief you can lay on the opposition. Repair, because if at the end of the phase, which has a strict time limit, you have any gaps at all in your wall, it's the big game over. Sounds interesting, doesn't it?

As it happens, I hate it to bits – but other players I know have gone completely loopy over it, saying it's the best thing since the abolition of the Poll Tax. Advice ? Try it for yourselves!

OK – why do you play video games? Sheer exhilaration of the struggle between man and machine? You want to make yourself astonishingly attractive to women? You've decided to holiday in Skegness and it's been raining for solid for the last ten days? All of these things probably – but more importantly, you want to establish yourself within a peer group.

And the best way to do that is to play a game head-to-head, two players. Rather sadly, there are few games that have this facility, the best to date being Namco's wonderful Final Lap. Now Sega have come out with the equivalent on the theme of motorcycle racing and it's called GP Rider.

Being a Sega piece of kit, there are lots and lots of sprites zooming around at very high speed looking rather pretty, but more importantly, it is a great racing game, with a real feel to it, particularly when you play the sit-down version when you have to lean the bike over to steer it around the corners.



The track you race on is not easy to master – particularly as Sega has introduced halfway realistic bike dynamics – but it helps that you have the option of automatic or manual gears. Learn the layout of the track on Auto and then find out how you can gain the extra few seconds by moving to manual! The best two players game on the streets right now, if you can drag a friend along to play it, GP Rider is a must!

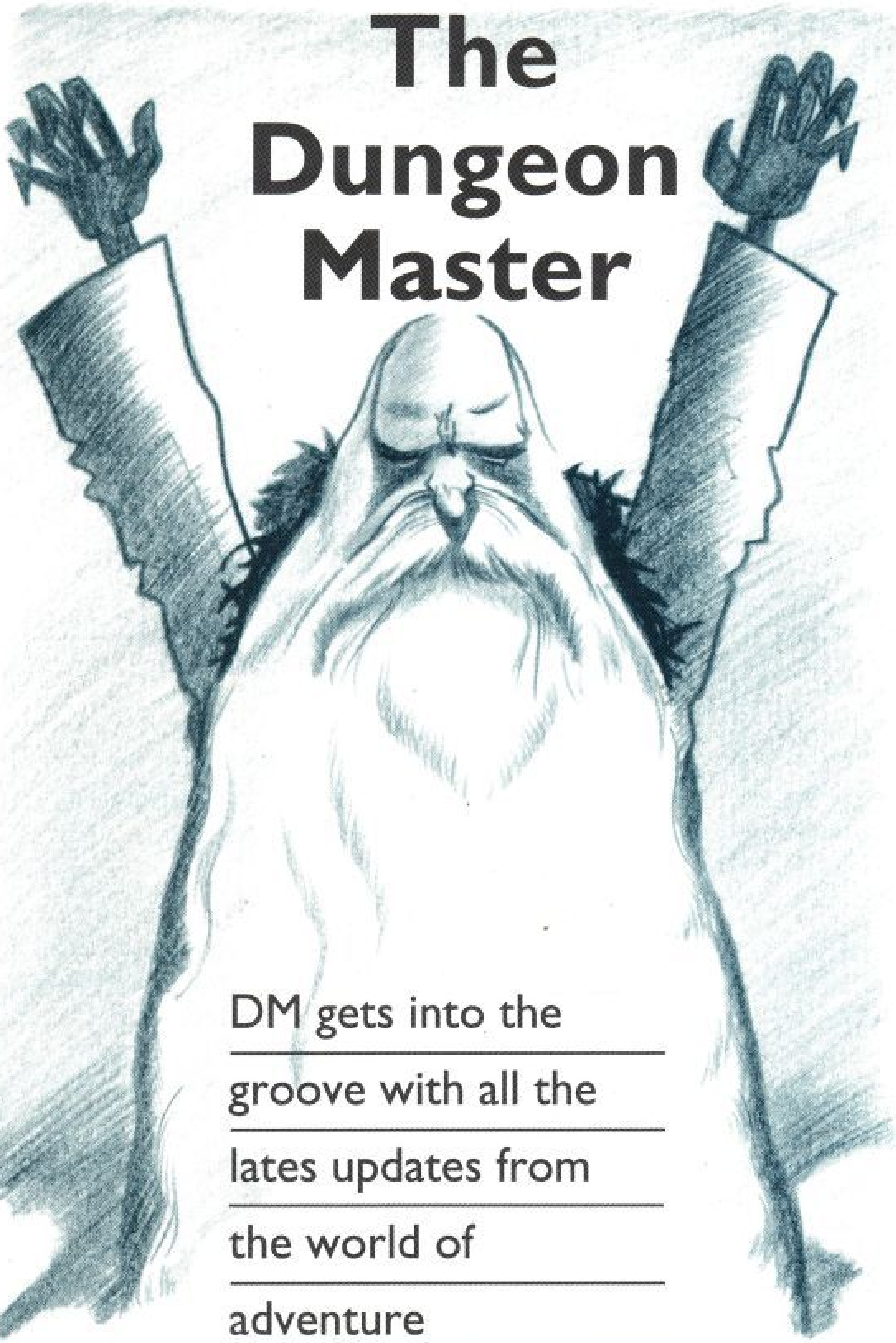
Finally, a game that Sega sneaked out a while ago that might take your fancy – it's called Boreach. Those of you familiar with the output of wacky comedian Billy Connelly will know of his invention of the euphemism "Hugh and Ralph" and his intensive study of diced carrots. Perhaps Sega are set to rival him with, "Boreach". Or maybe that's just the way they say it in Japan?

An isometrically viewed puzzle game, here you must guide a slowly moving shiny red ball along a tile based track, only using predetermined deflectors. By placing these down on the playfield, you bounce the ball along, trying to avoid the perilous obstacles that bar the way and trying to make sure the ball doesn't fall off into the Void.

You'll get no adrenaline surge from playing this baby, but it's quirky enough that you might find yourself having just that one more go or three, inbetween games of Alien Genocide. That's it for this month – more on Virtuality next time.



The Dungeon Master



DM gets into the groove with all the lates updates from the world of adventure

Would you like to play the adventures of yesteryear but do not know where to find them? This is a common problem judging by my (ever-increasing) mailbag, so let me offer you some guidance in tracking them down. First off, look through all the advertisers in this issue plus the recent back issues. A number of the software mail order advertisements carry some of the older adventure titles amongst their stock. The added bonus here is, that because they are "old", they are usually available at reduced prices.

Secondly, check out a mail order company by the name of Comsoft (Coldstream) Ltd. Their address is:- 48 Duke Street, Coldstream, Scotland, TD12 4LF. Tel. 0890 3232. Their latest CPC catalogue includes the following titles:- BIG SLEAZE: BOGGIT: FEDERATION: FRANKENSTEIN: KWAH!: REBEL PLANET: ROD PIKES HORROR COMPILATION: TERRORMOLINOS: TOP SECRET/MOUNTAINS OF KET and VILLAGE OF LOST SOULS. When I spoke to them they told me that stocks were limited, so it is advisable to check with them before you order.

Thirdly, keep reading these pages. As soon as I receive any new information, I will pass it on.

Adventuring News

The Dungeon Master was very sad to read of the demise of The Interceptor Group. Although software houses having to wind up is nothing new, Interceptor have always had a special place in my heart. In the mid-eighties they released a string of text/graphic adventures for the CPC, including one entitled MESSAGE FROM ANDROMEDA. Now this game just happens to be the first adventure played and completed by yours truly. In fact, if I hadn't enjoyed playing it so much, I probably wouldn't have played another one after that and definitely wouldn't be writing these articles for you now. So I hope that Interceptor can rise again from the ashes and perhaps even consider releasing CPC adventures once again.

That prolific software distributor WoW, have been increasing their catalogue again. Newly released are; YARKON BLUES @ £2.00 and ORB QUEST (4 parts) @ £5.00. Golden oldies re-issued are; FLOOK (2 parts) @ £3.00 and THE CASE OF THE MIXED-UP SHYMER @ £2.00. Prices quoted are for cassettes but disc versions are also available. Further details can be obtained from; 78 Radipole Lane, Weymouth, Dorset. DT4 9RS. A new name to me on the CPC scene is Simon Langan. Simon has written an adventure using PAW entitled TALISMAN. It includes one the best "home produced" manuals I have ever seen and over 80 locations. This is a game for exploring and mapping but not much in the way of logical puzzles to solve. If you enjoy frustration, send £4.50 for a disc to; 33 Dacre Crescent, Kimpton, Hitchin, Herts. SG4 8QJ.

Ken Bond, who has three successes to his name already, including THE TEST which was voted the best 8-bit text adventure by Adventure Probe readers in 1990, has been programming again in PAW and has now released THE SPIRO LEGACY. Priced @ £4.50 on disc, Ken can be contacted at; 17 Adel Park Gardens, Adel, Leeds, West Yorkshire, LS16 8BN.

Can you review?

Jim Struthers, who is an ardent CPC adventure player from the frozen wastes of Northumberland, has kindly supplied me with his own review of an adventure. I think that this is an excellent idea and if anybody else would like to submit something similar, then as long as it doesn't leave the magazine or me open to a libel suit, then I'd be delighted to include your opinion of a game, whether complimentary or otherwise. So over to Jim and his review:-

GRUE-KNAPPED! From Atlas Adventure Software. 67 Lloyd Street, Llandudno, Gwynedd. LL30 2YP. Price £2.50 plus send your own formatted disc or £2.99 on tape. Suitable for CPC 464/

6128.

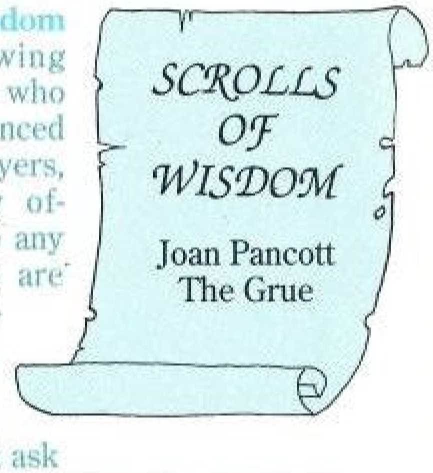
"I had a feeling that this adventure was going to be different. Was my intuition correct? I knew of the author's many humorous contributions to the magazine Adventure Probe, so I wondered if this was going to be as funny? The character that the story is built around is a Grue. These evil beasts supposedly lurk in dark places and leap out to devour unwary adventurers who enter their domain, without a lamp or a torch. They first appeared in the Zork trilogy from Infocom but since then, have passed into adventure folk-lore, along with twisty-little mazes and rings that make you invisible. This has been written as a spoof, poking fun at quite a few recognisable adventure themes but also extending the story by asking you to escape from the Grue, after he has captured you but is saving you for his supper. This is the author's first game and it has been written with the AD-LAN adventure system.

Now to the nitty gritty. Does the game play well? Does it run smoothly? Is it logical? The answer is yes to all three. The first thing you notice is the lack of graphics. So what? Who needs them, when the game is as good as this. Mode one has been used and the screen is effectively filled with exciting text, thus immediately creating the required atmosphere. There is a lot of tongue-in-cheek humour and numerous responses to almost all inputs. Don't let the humour deter you however, as a gem of a game is lurking behind the scenes here. The odd puzzle or two can be rather devious but help is at hand. There is a built-in VOCAB list of helpful verbs plus some friendly hints and responses. Well written and a must for everyone's collection."

Well, thanks very much for that Jim. I will search through the old treasure chest and find something suitable for you to add to your collection. Do we have any other budding reviewers out there? If so, send them in to the "I Want To Write An Even Better Adventure Review Than What Jim Struthers Did" Department, c/o The Dungeon Master, ACU.



Scroll Of Wisdom



The following good people who are all experienced adventure players, have kindly offered to help any readers who are having difficulty with a particular problem. Please do not ask for full solutions and treat them with respect. Either telephone ONLY during the times shown or include a stamped S.A.E. if you write to them.

Joan Pancott. Tel: 0305 784155 (1pm to 10pm): 78 Radipole Lane, Weymouth, Dorset. DT4 9RS. The Witch of Wessex can help with just about every adventure released on the CPC.

The Grue. Tel: 0695 573141 (7.30pm to 9pm Mon to Fri) 64 County Road, Ormskirk, West Lancs. L39 1QH. Despite his strange name, the Grue offers help on every Infocom adventure.

If you would like to see your name listed here, then just send me your details and a list of completed games.

Hints & Tips Department

Dave Havard has been true to his word and has supplied the following problem solvers for a couple of Infocom's:

<u>CUTTHROATS.</u>

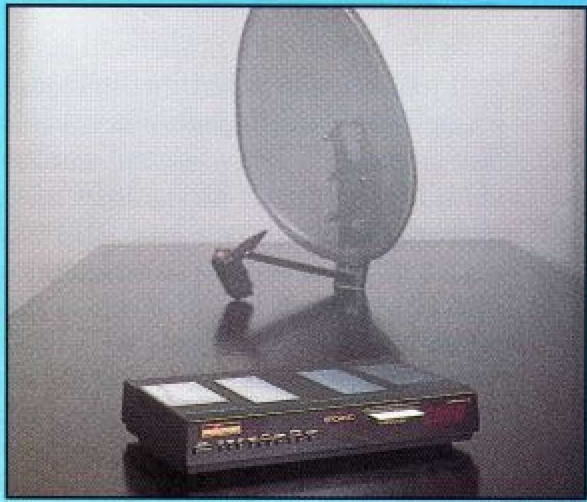
1) Don't let Mcginty see you with anything to do with diving or money. If he does, he will follow you everywhere and you can't buy anything.
2) Have the shark repellent ready as soon as you enter the water.

<u>LURKING HORROR</u>

1) Open the panel in the lift to find the flashlight.
2) To get rid of the rats, hit the valve with the crowbar. Do it again when you see them.

Thanks a bundle Dave. Now if you have any clues or hints that you would just love to pass on to your fellow adventurers, or if you have a particular game that is driving you up the wall and would like to see some help printed here about it, then just write to me here at ACU and I'll take care of it for you. Happy adventuring.

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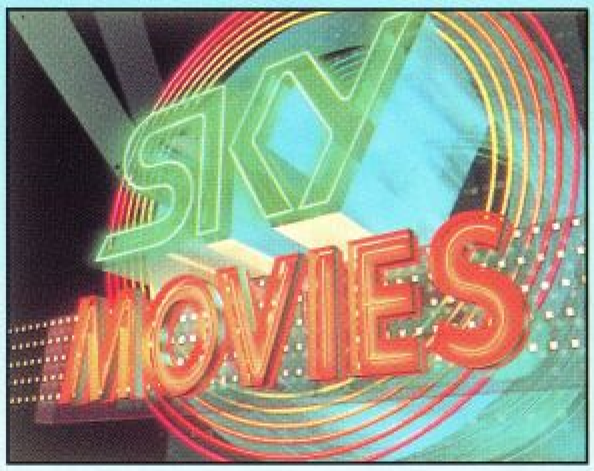
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ACU

Get your gloves on and suit yourself up as the ACU team takes on the sub-aqua terrors of Thunder Jaws, push themselves to the limit with Extreme and goes totally curly-wurly over Helter Skelter.

GAMEPLAN



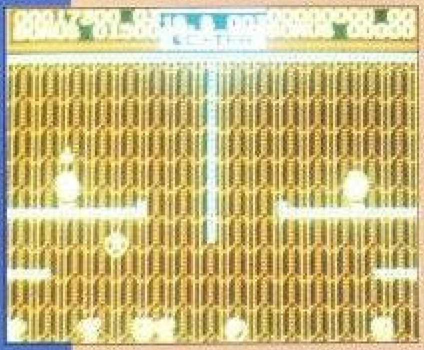
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1	(2)	Double Dragon	Mastertronic
2	(NE)	After Burner	Hit Squad
3	(NE)	Real Ghostbusters	Hitsquad
4	(NE)	Cavemania	Atlantis
5	[illegible]	Operation Wolf	Hit Squad
6	(NE)	Vigilante	Kixx
7	[illegible]	Teenage Mutant Hero Turtles	Mirrorsoft
8	(NE)	Defenders of the Earth	Hitec Software
9	(4)	[illegible]	Code Masters
10	(NE)	Rambo 3	Hit Squad
11	[illegible]	F1 Tornado	Zeppelin
12	[illegible]	Quattro Adventure	Codemasters
13	[illegible]	[illegible]	Kixx
14	[illegible]	R-Type	Hit Squad
15	(NE)	Super Scramble Simulator	Kixx
16	(NE)	[illegible]	Zeppelin
17	(NE)	Quattro Combat	Code Masters
18	[illegible]	[illegible]	Hitec Software
19	[illegible]	Target Renegade	Hit Squad
20	(NE)	Hong Kong Phooey	Hitec Software

[illegible]

Fists of Fury

Survival is the name of the game and only the best will succeed.

Virgin Games has come up with some pretty hot compilations in the past and Fists of Fury is certainly no exception. Four spectacular blasts, all best sellers in their own right, coming together to offer a street fighting challenge of epic proportions. Think you can handle it? You've got to try it to find out.

First up is that classic Ninja beat-em-up Shinobi. Counting the number of hours we've all spent chucking our shurikens about the screen with this one would probably be like counting the number of stars in the sky at night.

With some excellent graphics and super smooth scrolling, getting out there to rescue the kidnapped kids is a treat. There are more than enough thugs out there who want to spoil your day but, by mastering the joystick movements, the hand to hand combat is exciting and certainly rewarding. There's nothing like catching a thug fairly and squarely in the guts with a well-timed kick.

Fists of fury is indeed a pretty much ninja orientated blast, but the variety of the games ensures that you won't get bored in a hurry.



The second offering is Ninja Warriors, which will have two of you out and about committing some outrageous assassination attempts. It's all about getting to grips with the ultra-evil Bangler and, if you manage to work your way through the hordes of guards to his inner sanctum, you deserve all the credit you can get.



Ninja Warriors is no picnic. With plenty of action and some neat sound effects, you won't want to put it down in a hurry.

Rolling along on the same theme, Double Dragon II has you and a chum hitting the streets in the quest to avenge the death of your beloved Marian. Get used to the movements and take Billy and Jimmy through a wide variety of scenarios, right up to the secret lair of the boss himself.



Double Dragon is superbly colourful, with plenty of bonusses, not least the possibility of bringing Marian back to life. However, you'll need to be pretty darned quick with your firsts to get that far.

Last, but by no means least, on this superb collection, is the masterful Dynamite Dux. These cheerful chappies have been the subject of compilations before, but they certainly brighten up any collection on the market.

Rescuing Lucy from the clutches of the evil Achacha is an excellent way of spending your spare time. Take on a whole host of weird and wonderful opponents. Bin and Pin certainly come in for some rough treatment, so get you upper cuts well and truly sorted out and get out there and do some damage.

All of the games on Fists of Fury are brilliantly presented, offering excellent all-round playability, especially for Ninja fans and particularly for those of you who like a good, clean, on-screen scrap.

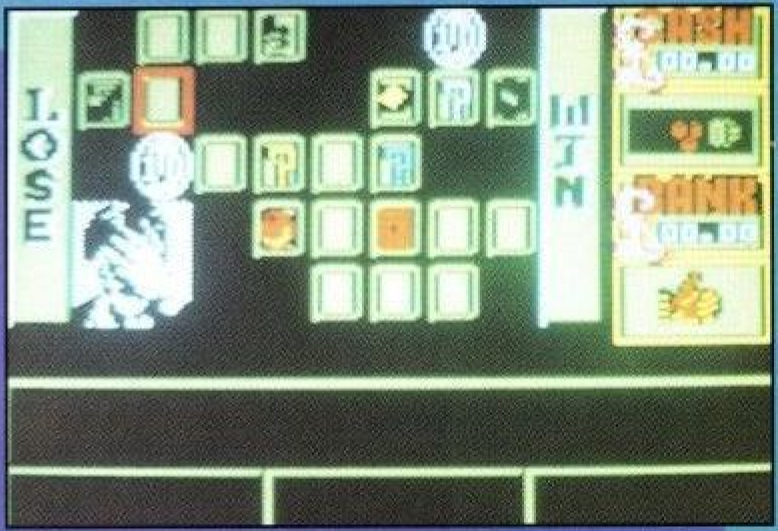
John Taylor

ROUND-UP			
NAME	Fists of Fury		
FROM	Virgin Games	PRICE	Disc £24.99 Cassette £14.99
86%	84%	88%	TNT
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Emlyn Hughes Arcade Quiz

Get your thinking caps on and prepare for some ticklish teasers.



"I know it. I know it!" come the cries, in that dulcet Merseyside squeak. Emlyn Hughes, you either love him, or you're not a Liverpool fan.

However, and regardless of which side you like your bread buttered, if you're into a bit of trivia, especially sports trivia, then the Arcade Quiz is going to be right up your street.

Load up and watch the tempting trail of fruits and question marks unravel before your very eyes. Your task, of course, is to get from one end of the trail to the other, but it's not as easy as it looks.

For starters, you've got to set your wits against the clock. Every time you get a question wrong, you lose valuable time as the screen shifts slowly but surely towards the lose line.

Get a question right, by picking the correct answer from a selection of three, and you can move on to the next square in the treasure trail.

Just like a real arcade game, you insert your credits at the beginning of each game and, hunting out the cash bonusses along the way can give a healthy advance for prolonged playing power.

Be warned, though, many of the cash prizes lurk behind very dodgy squares indeed. Watch out for the locking squares, which may well trap you in a forgotten corner, or throw you right off your trail completely.

Collecting the various fruits will also bring in extra points but, they too are often well guarded along the route.

If your trivia knowledge is well up to scratch, you should find yourself flying across the screen to the finish line, with plenty of time to spare to pick up the bonus points along the way. If not, take a look at Emlyn's face at the bottom of the screen and he'll show you exactly what he thinks of your progress-painful.

With a seemingly endless quota of trails and more question blocks to replace the ones you already know off by heart, Emlyn Hughes Arcade Quiz is excellent in terms of entertainment value.

Ok, it might not tear you from your seat like a good old shooty but, with cleverly thought out graphics and lots of hidden features, the game is superb fun and well worth challenging your friends or family to.

The only drawback with games like this though, is that you don't get money flooding out of the bottom of the machine like the real thing. That aside, Emlyn Hughes is well worth a bash.

Jim Johnson

BIG DEAL

Thanks to those awfully generous people at Audiogenic, ACU can offer you a stunning deal on the Emlyn Hughes Arcade Quiz.

For disc users, there's a massive £5 to be saved on the RRP, while tape users can get a neat saving of £3. Just tick the appropriate box below and send this coupon along with the correct money and an A4 SAE to ACU Big Deal. c/o Audiogenic, Unit 27, Christchurch Industrial Centre, Forward Drive, Wealdstone. Harrow, Middx. HA3 8NT.

☐ Please send me EHAQ on disc for just £9.99
☐ Please send me EHAQ on tape for just £6.99

ROUND-UP

NAME	Emlyn Hughes Arcade Quiz		
FROM	Auidogenic	PRICE	Disc £14.99 Cassette £9.99
89%	87%	90%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Extreme

As the past returns to haunt the future, it's your job to save the world.

Do you remember, way back in 1973, when the deep space probe Pioneer 10 passed Jupiter and began its mysterious journey into outer space? What do you mean you weren't even born then? Never mind, it did anyway, carrying diagrams of ourselves, examples of our customs and musical tastes.

Mind you, if they sent a cross-section of some of the music that was around in the early seventies, who'd want to get in touch with us?

The year now is 3021 AD, and Pioneer has returned. However, it's brought along some very unexpected company with it. Carrying the probe is a very highly armed alien ship which, shock, horror, has left its self-destruct mechanism well and truly operative, threatening to blow the earth from here to eternity, as it were. (I told you that music was bad, didn't I!)

The fact of the matter is, if someone doesn't get in there quick and disarm it, life as we know it will cease to be, and that's where you come in.

As a mega shoot-em-up blast, Extreme is guaranteed to attract a huge following. Exciting from the word go, the action just keeps on hotting up until the final confrontation deep within the bowels of the spaceship.

Equipped with some heavy duty missile launchers and guns, the idea is to go in gunning and keep on going until you're forced to stop.

In this epic offering, however, this will happen all too often, as you are confronted by some extremely puzzling conundrums.

Carefully does it. You'll need to be on your toes at all times to work your way out of some of the colourful locations, and you'll need your wits about you at all times, in order to work out ways of progressing without setting off that bad old bomb.

In between the braintwisting, though, you'll encounter more than your fair share of blasting, as you take on the alien pirates. Your heavy duty armour will help out, but sheer fire power is the only way through these sections.

As you dive deep into the fuel tanks and struggle to restore the ship's power crystal, keep your eyes peeled for various weapons and power-ups lying around. As you reach the main computer terminal and begin the frantic struggle to put it out of action, you're going to need all the help you can get.

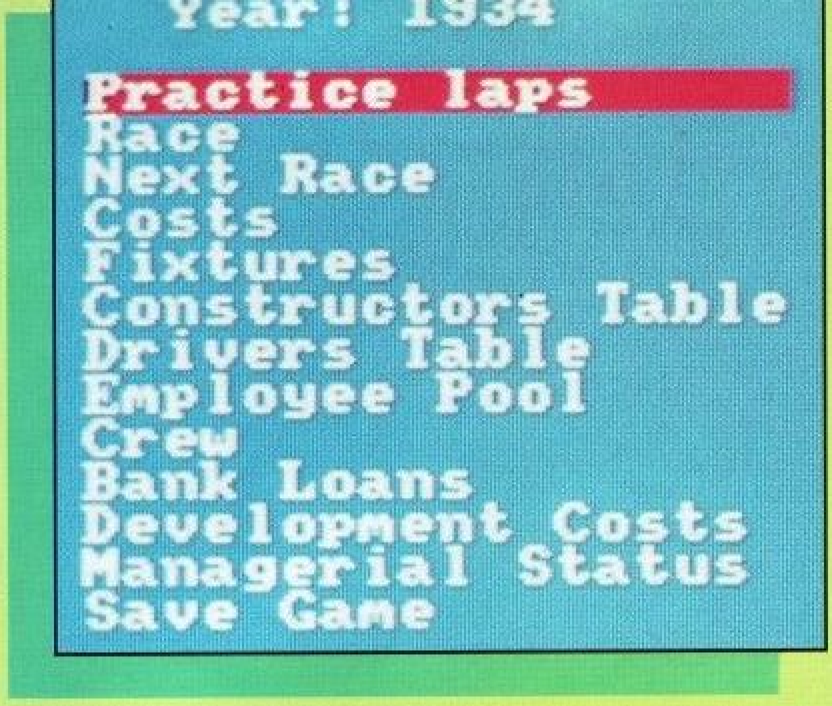


Featuring superb animated graphics and some truly momentous sound effects, the excellent parallax scrolling of Extreme is a joy to behold. All in all, Extreme is designed to test the 8-bit machine to the limits, and succeeds on all counts.

Jim Johnson



ROUND-UP			
NAME	Extreme		
FROM	Digital Integration	PRICE	Disk £14.95 Cassette £9.95
92%	94%	97%	JACKPOT
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Grand Prix

The championship is yours for the taking, but you'll need some nifty bargaining to get there.

Watching the old Grand Prix races on the box can give you a pretty one sided view of events leading up to the big race. The glamour, the advertising, the glory of victory and the magnum of Champagne on the winner's rostrum.

But what about the hassle of actually getting your car up for the race in the first place?

In this extremely clever management offering from D&H games, not only do you get a chance at glory, but you also get to wallow in the muck and mire of getting the preparations just right to succeed.

First of all, who pays for the massive costs of putting a formula 1 car on the track? What about fuel, tyres, wages for driver and pit crew?

Exactly. You're going to need some pretty hefty sponsors, as well as a very understanding bank manager if you want to get past the starting grid.

It's all very well having a top class driver, but if your pit crew don't know a piston ring from a transmission arm, I don't rate your chances in either the Driver or Construction Championships.

Ok. So you've got some pretty big money up front from Pirelli, Shell and other big names. Your tyres, engine and fuel are being well subsidised, and you're looking a pretty good bet on the grid. Now what?

Well, there's nothing to stop you taking out a small flutter on your car before the big race. Especially if you've had a good showing in the practice laps.

On to the big day itself. Get the pit crew in order, and wait for the green flag. Using some nifty keyboard controls, you can keep a track of your position and call your car in at any time.

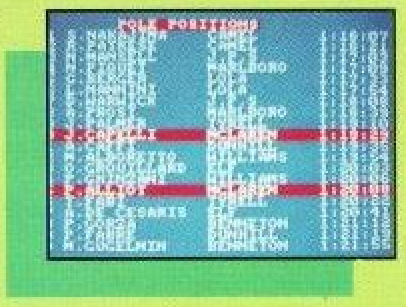
If you've got problems, the keyboard can point your mechanics in the right direction. A quick refuel and your man is out on the track again.

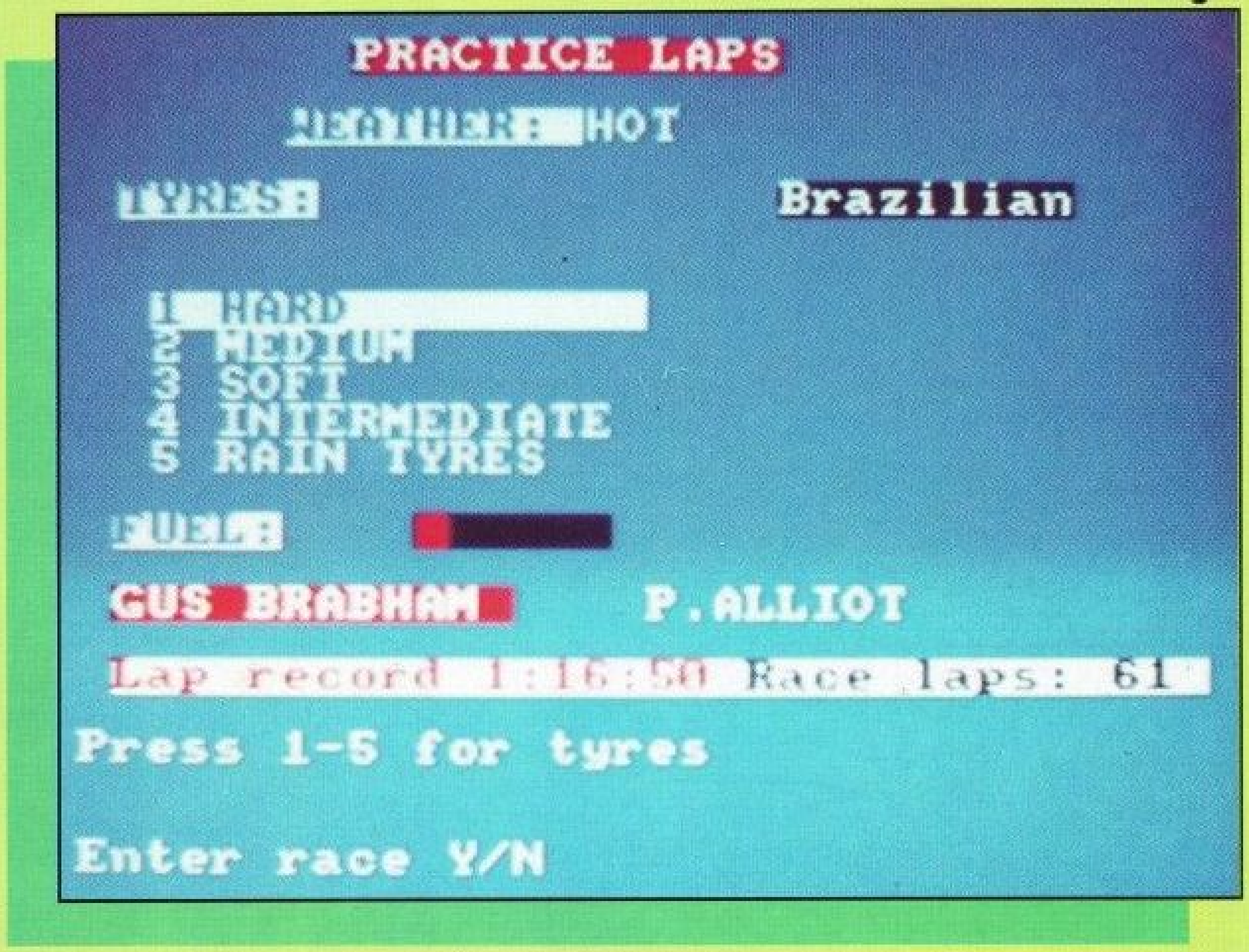
Just as in real management, you have the power to hire and fire at will, but be careful not to take on too many employees, or leave big gaps in your maintenance crew.

With some clever forethought and canny control of your team, you never know, you might just make it up there onto the rostrum, with a nice fat share of the prize money.

As a management game, Grand Prix is jam-packed with options and decisions to be made. You really are in total control and, with some neat race day graphics, Grand Prix all adds up to an excellent package, well worth getting hold of. You can almost smell the grease and oil from the pits and, if you want to succeed you'll have to get right up to your elbows in it.

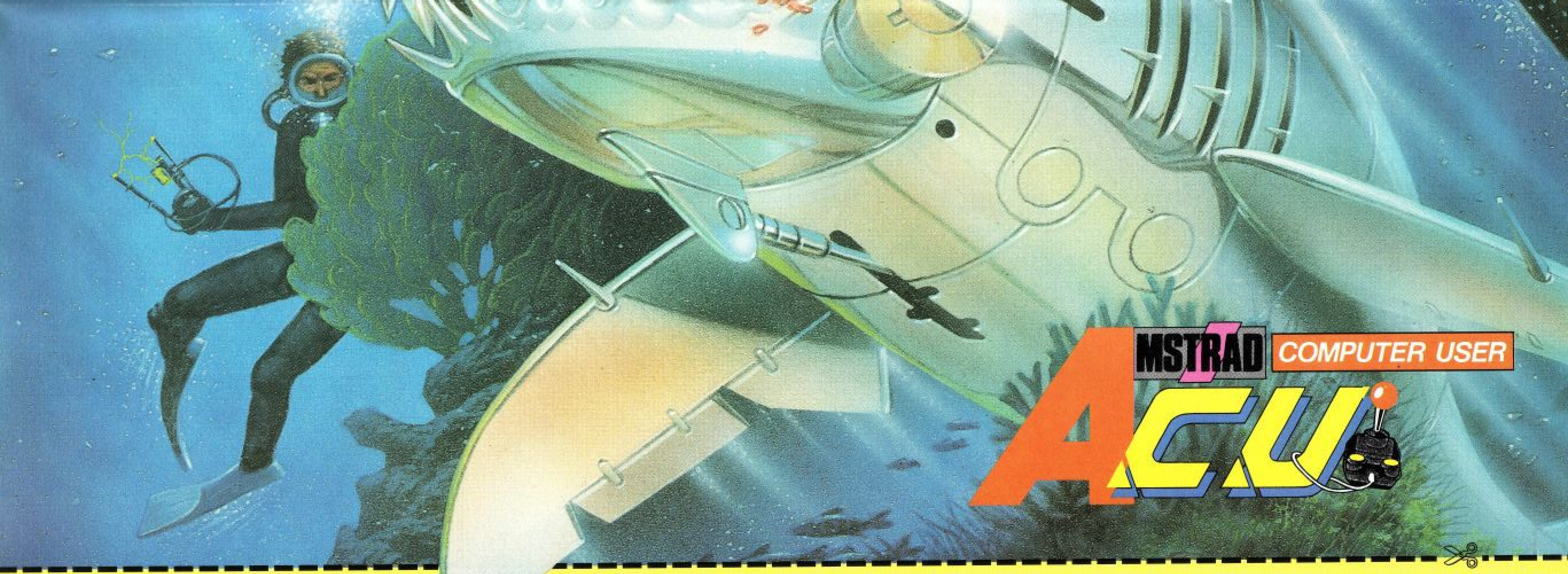
Chris Knight





ROUND-UP

NAME	Grand Prix		
FROM	D&H Games	PRICE	Cassette £9.95
78%	82%	83%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT



Thunder Jaws

Sub-aqua action like you've never seen it before.

Due out this month, make sure you make a beeline for the shops when this one comes to town.

Deep in the dark ocean waters, lies a submerged laboratory. On your own, or



with a friend, your task in this superb underwater shoot-em-up, is to locate the lab and rescue the beautiful maidens before they get transformed into lizard monsters. Not a very nice fate, I'm sure you'll agree, so get out there and do your best.

In the way, however, and determined to make your life a misery, are the vicious cybernetic sharks and mutant mantas, each patrolling their specific domains. Fight your way through one lot and you're doing well. Get past both sets of monsters and you deserve the high scores.

Watch yourselves in the underwater caverns, or some of the horrific seaquakes could well shake your nerves,





while the volcanic eruptions will do you no good at all if you get caught up in them.

From what we've seen of it so far, this blast will knock you for six. The graphics look superb and the scrolling is super-smooth, not to mention the all too realistic sound effects.

As a one player game, Thunder Jaws is excellent, but as a two player blast, it really is out of this world, and well worth investing your pocket money in.

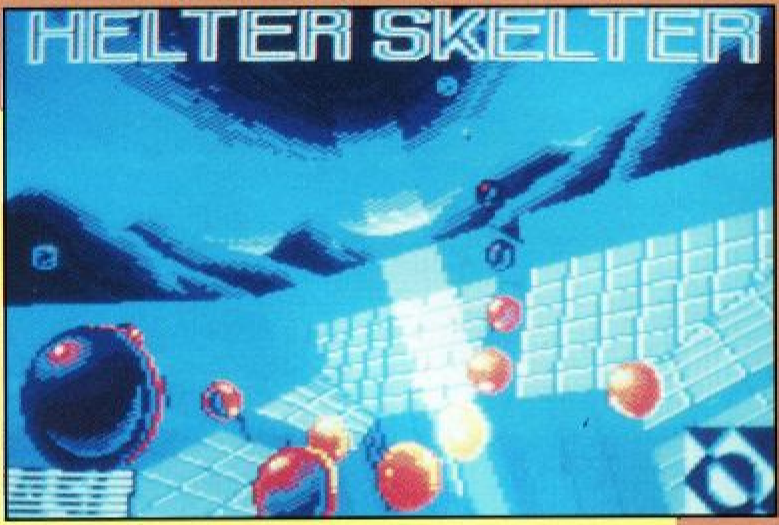
Take a look at these screenshots for some hints to the quality of the graphics, but to get the full effects, you'll need to grab the game when it comes out. Try it, you certainly won't be disappointed.

John Taylor

Thunder Jaws
Domark
Disc £14.99
Cassette £9.99
Release date: June 1991


ThunderJaws





Helter Skelter

Bounce away the blues with Billy and Bobby.

Billy the ball has got a cousin Bobby and, between the pair of them, they're a right couple of head bangers, especially when it comes to banging heads with monsters.

Helter Skelter is an incredibly easy game to play, but a devil to master. The object of this friendly little blast, is to bounce around the screen squashing monsters. Sounds incredibly easy.

The problem is, you're not only doing it against the clock, but you've also got to squash the monsters in a particular order, otherwise you'll end up with even more monsters on-screen than you started with.

Hmm. Problems, problems. Your first objective must be to master control of the billy (or Bobby) bounce.

By pressing the fire button at just the right time, manipulating your ball will become a lot easier, allowing you to time bounces and direction to perfection, thus squashing more monsters for your money.

There are an incredible 80 screens to play through in Helter Skelter, some of them specifically designed for two player mode. As you can imagine, if every monster you hit out of sequence divides into two, things can get pretty hair-raising on the higher levels.

Throughout each level, there are plenty of bonusses to be had, including extra time, balls and points. Collecting the letters to spell EXTRA will help, but be careful not to collect identical letters, or they'll cancel each other out.

Despite the simplicity of the game, Helter Skelter is incredibly addictive and, despite the many setbacks you'll undoubtedly encounter, you'll want to keep right on going to the bitter end.

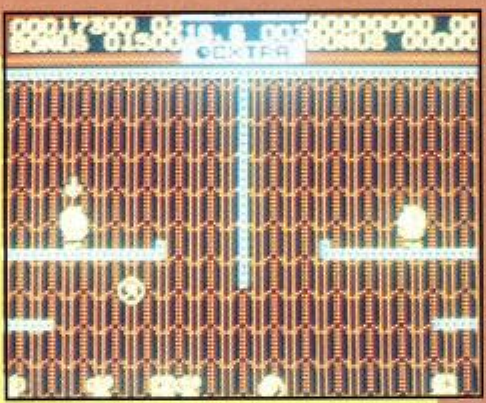
To help you out, there's a password at the end of every tenth level, allowing you to restart where you left off to save time.

However, the best part of Helter Skelter is the screen designer option. Using this very nifty device, you can create your very own devilish challenges for your friends. Position platforms where you want; decide which monsters you want where and how fast they'll move, and then set yourself a time limit that'll have your opponents reeling.

Make your designs as easy or as hard as you like and Helter Skelter takes on a whole new life. By initialising your discs, you can store virtually any number of levels on your own game so that, even if you do by any chance get bored with the original, there's a whole new challenge waiting for you to take on.

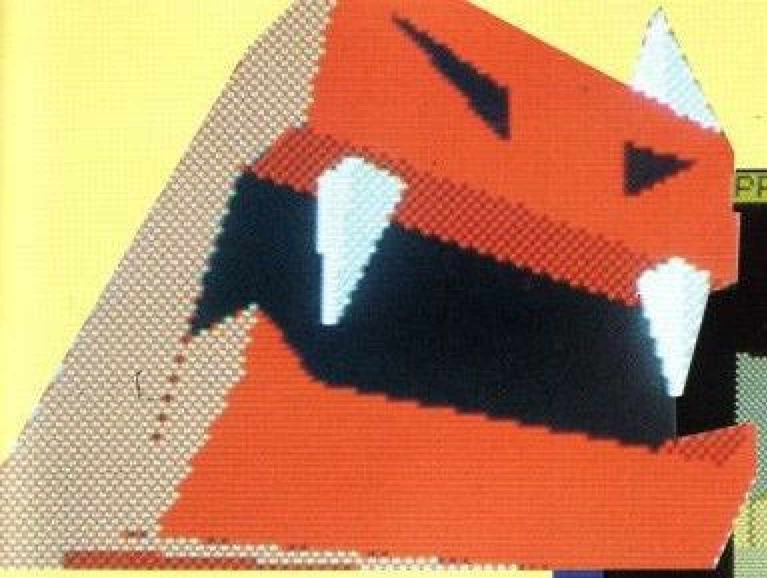
Brilliantly devised, with some clever graphics and sound effects. Helter Skelter is one package worth every penny of its price. Buy it and discover it for yourselves.

Jim Johnson



ROUND-UP

NAME	Helter Skelter		
FROM	Audiogenic	PRICE	Cassette £9.99
84%	86%	93%	GOLD
GRAFFIX	SONIX	PLAYABILITY	VERDICT





3-D Construction kit

Escape from reality with a world of your own creating

If you're looking for something totally different, then look no further than this excellent package from Domark, which basically features everything you'd want from a game and draws upon that most creative of imaginations, your own brain!

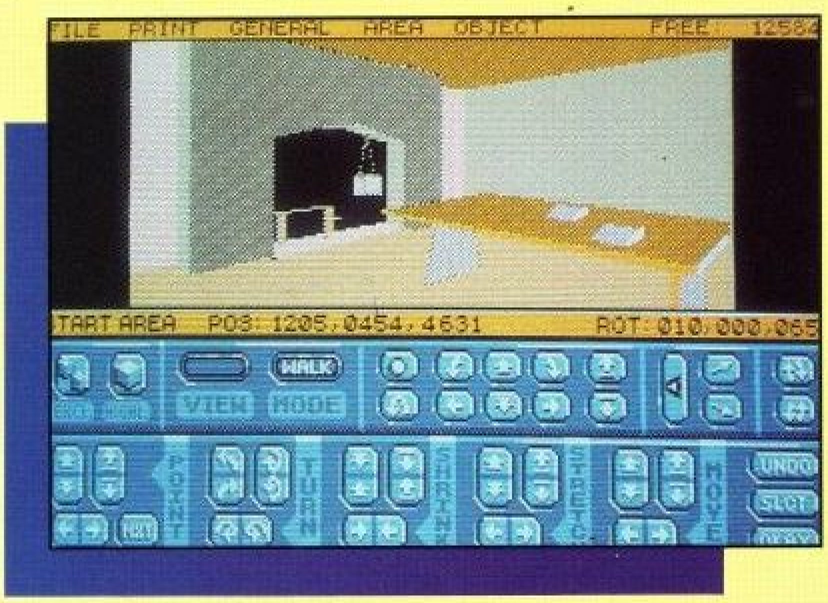
Using the Freescape 2 techniques featured in that epic Catle Master, here's your chance to devise your very own masterpiece, enabling you to plan whole new environments, people it with weird and wonderful creations, and even add sound effects to boot.

The most outstanding point of the kit is the ease with which you can create your masterpieces. By choosing set pieces from the massive library, you can stretch, squeeze and squash each separate piece to suit your own 3-D ideas, getting things just right to add to.

Now, there are those of you out there who, like myself, tend to be a little lazy at times. For us, those nice people at Domark have included a specially written arcade style adventure to play with. This should keep you busy for some time, whilst at the same time showing you exactly what you yourself can create using the kit, by way of encouragement.

To be fair, with the vast assortment of goodies included in the memory banks, it won't take much encouragement to get you going, and then, well, the sky's the limit really.

For budding games creators, the 3-D Construction Kit is brimming with ideas, and ready-made environments to make your creations a little easier, but the kit also has many other possible uses.



Using the superb 3-D graphics, you can also have a go at modelling and creating diagrams or architectural models. For educational purposes, you can be a real teacher's pet the next time she asks you to carry out an urban study, by creating a three dimensional model of the town in question, carefully coloured and marked. Oooh, I can see some of you squirming with delight already. Seriously though, the kit is ideal for educational purposes, even though many of you could think of a thousand better uses for it than anything to do with school.

What about that idea for an outer space alien shoot-'em up you had? Or that medieval adventure game? Or that camel-riding simulator? You what? Well, like I said, once you get going, only the limits of your own imagination are going to stop you.

Using the extensive internal library of sound effects, you should find a noise to suit your every need. After all, what's a good game without the bangs, blasts and zaps.

For a total package of all-round fun and entertainment, the 3-D Construction Kit is an absolute must for the price. You never know, once you've got it, you may never look at your CPC in the same light again.

Jim Johnson

ROUND-UP			
NAME	3-D Construction Kit		
FROM	Domark	PRICE	Disk £24.99 Cassette £24.99
95%	94%	98%	
GRAFFIX	SONIX	PLAYABILITY	VERDICT

Budget Basement

An extended basement this month, giving you even more value in the pocket money stakes



GEMINI WING

A nastier piece of underhand trickery has yet to be seen since this beautiful blast hit the market. After some particularly virulent gutter press, the whole of the universe has declared war on Earth.

Quite a prospect, indeed. However, what they didn't take into account, was the ultra hi-tech weaponry the old humanoid scientists could dream up. In particular, the Gemini Wing fighter craft.

Jump aboard and hit the fire button. In fact, keep your finger glued to the fire button and you might just safeguard Earth's future.

Screaming the fighter's slogan of "Die Mutant Alien Scum!" may help, but sheer fire power will save the day as wave upon wave of organic mutants fill the screen and spell your destiny.

Hit the smaller crawlies and you'll get yourself a very handy gunball, offering anything from a three way fire ball, to the windscreen wiper of death. All very handy things to have in your armoury.

But, and this is where the skullduggery comes in, if you happen to be playing in two player mode, and your partner's got more gunballs than you, why not pinch them for yourself.

Very nasty, what? Oh yes, guaranteed to cause needle and give more of an edge to this excellently conceived shoot-em-up.

As a budget offering, you simply cannot afford to miss Gemini Wing. Just watch your blood pressure in the heat of the battle is my only advice.

THE REAL GHOSTBUSTERS

Real? Totally unreal if you ask me. Take on the underworld on your own or with a friend and tackle the spirits over 10 gruelling levels, with just a hand gun and your proton beam between yourselves and the next dimension.



Utilising some phenomenal graphics, your task is to go out creature hunting. Using either of your weapons, you can kill off the nasties and transform them into ghosts. Once you've done that, use your proton beam to zap them and store them in your backpack.

At the end of each level, you'll come up against a particularly nasty ghoul, who needs to be defeated before you can progress.

With friendly Slimer around to give some added protection, keep your eyes open for power-ups, and don't let your proton beam get too low, or the show could be over.

For some excellent action and well thought-out gameplay, Ghostbusters has got to be worth looking at.

DRILLER

Using some stunning 3D graphics, you'll certainly get a feel for the tension involved in Driller. With only hours to go before a meteor strike blows up the moon of Mitral, your task is to get down onto the surface and tap the potentially lethal deposits which could amplify the explosion and knock your home planet of Evath off its axis, killing everybody with it.

Heavily mined by the outlawed Ketar peoples, there are 18 heavily armed sectors on the moon, each of which has to be explored and made safe, through the positioning of a drilling station above the vast pockets of underground gas.

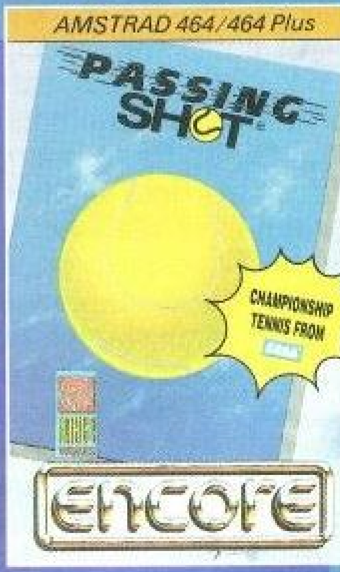
This is certainly no easy task, particularly because each sector is equipped with deadly accurate laser beacons to see off uwanted intruders.

Manoeuvre yourself gingerly around the defences and use your initiative to locate each gas centre, before sending back to Evath with teleport orders for the drilling rigs.



Be careful, each wrong position or damaged rig costs valuable energy and time. You can replace your energy using the Rubicon crystals lying around, but you can't make up for lost time as the meteor approaches.

Driller is a cunningly worked offering with some superb graphic effects. As a budget offering, you'll be glued to the screen for hours and you'll certainly feel the tension mounting as time elapses.



PASSING SHOT

Moving on to a whole new ball game, is anyone for tennis? If so, then you shouldn't miss out on this excellent simulator, which will see you and/or a friend battling it out for the championships.

Playing the deciding set in a three set match, you can play singles or doubles with a friend against some mean computer opponents, using some excellent real life touches.

Spectator level viewing for the serves moves onto overhead view for the rallies, giving you the best screen sights for the whole game.

Mastering the different strokes may take some getting used to, but once you've mastered the top spin, lob, slice and flat stroke, you're more than a match for anybody.

If you manage to defeat your opponent, it's off to some other sunny location, on grass or clay, for more of the same.

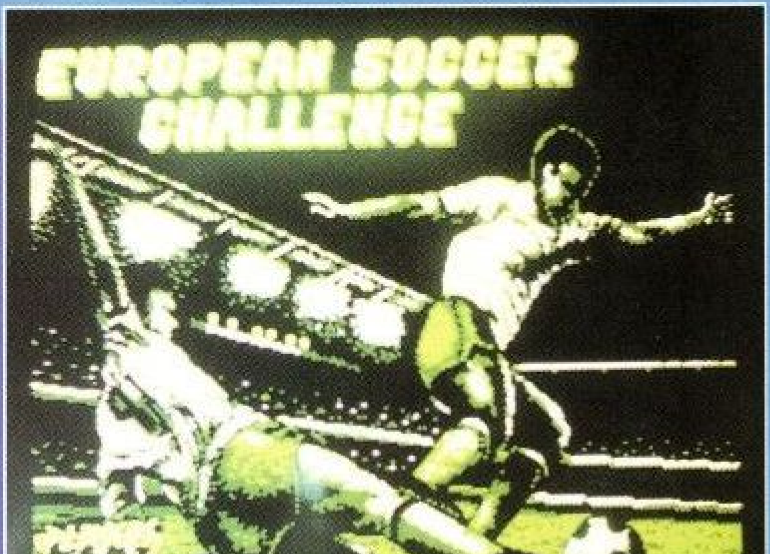
If you're into tennis, Passing Shot will be a must but, if you're not, it's pretty good fun and well worth a go.

EUROPEAN SOCCER

Playing against the computer or a friend, you can pick some pretty impressive teams from the line up for the European Cup and, using the joystick or keyboard, moving through the qualifiers and progressing towards the cup is superb fun.

As with many footie simulators, controlling your passing can be tricky at the best of times but, despite the overhead view being a little basic at times, the gameplay itself is surprisingly smooth and features all of the real-life on-pitch occurrences.

In fact, European Soccer Challenge is a joy to play, and should while away many a long hour as the excitement of the final draws near. An absolute must for footie fans.

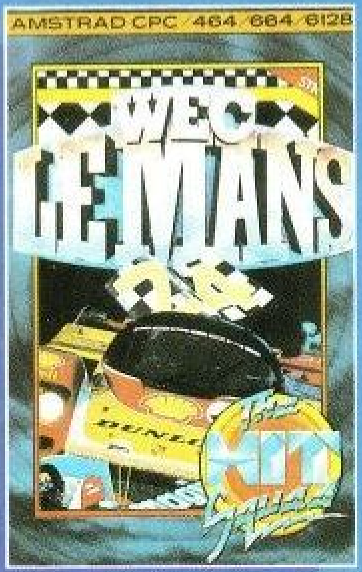


WEC LE MANS

The Le Mans 24 hour road race has got to be one of the most gruelling endurance tests of all time. Keeping your wits about you at all times at dangerously high speeds can seriously damage your nerves and, to be fair, enough of the excitement of the race has been captured in this little offering to make it worth every single penny of its budget price.



Featuring some superb graphics, the aim is to complete four action-packed laps, each with three checkpoints to be passed.



This isn't a matter of watching your fuel, it's a matter of watching your rear view mirror and the track at all times. One small mistake can cost you more than the race, so be sure to stay alert at all times.

Gear changes are all-important on cornering, especially as you come out into the long straights. Master the controls and the road is yours, just as long as you can stay alert enough to reach the end of it.

RAMBO III

To round up this month's prolonged foray into Budget land, try out Rambo III for a shooty of epic proportions, with a smart adventure based subgame to boot.

Based over three different scenarios, Rambo's first task is to rescue the kidnapped Colonel Trautman.

As you enter the fort, keep constantly on guard for enemy patrols and any stray weapons lying around. Use only silent weapons if you want to remain undetected.

Once the Colonel is freed, your next task is to prime a number or pre-positioned bombs in the jungle. The counter will show how many more you need to set before making for the helicopter and escape.

The final and most frantic stage, sees you commandeering an enemy tank and blasting hell for leather for the border.

All in all, this excellent combination of action and adventure makes for an absolutely brilliant action offering. You'll need to be good to survive, but, if you don't, you're going to want to get right back in there to try again. After all, nobody likes being pushed, do they!

Chris Knight

Gemini Wing	Mastertronic	£3.99	89%
The Real Ghostbusters	Hit Squad	£2.99	84%
Driller	Hit Squad	£2.99	80%
Passing Shot	Players	£2.99	78%
European Soccer	Players	£2.99	86%
Wec Le Mans	Hit Squad	£2.99	80%
Rambo III	Hit Squad	£2.99	94%

Mixed Bag



Gordon breaks the news of two new modems, and updates the Maxwell House BBS system.

Greetings, fellow riders of the BT wires. Calamity of calamities has struck the Maxwell House Bulletin Board System. It died. The circumstances of the death are far from mysterious – you might say natural causes, were you a coroner. Fact is, according to my smarty- pants bruvver the Doc, a head broke off in the PC's hard disk, and managed to kill the whole thing stone dead.

To say that minor panic ensued is putting too fine a point on it, folks, and my bruv ended up re-doing the whole thing, but with upgraded software, says he. It's still using Searchlight software, but at version 2 level, which, since I've used it quite a bit, is rather better than what was there previously.

I'd better give you a run-down on what's new in the sox so's you don't get lost when you log on. First, let's confirm the number – I'm told there's been some confusion. It's 071 828 1577, all speeds to V22bis (including the execrable V23), 24 hours a day, seven days a week, fifty-two weeks a year. That's, erm, a lot of hours!

OK, when you log in, if you aren't using ANSITERM (and if not, why not?), select the (N)one option as before, otherwise go for the (M)onochrome option. The rest is as was till you get to the Bulletins. Now, some folks liked to post bulletins rather than leave messages in the messaging areas. No can do now, folklettes – this bit is for de sysop only. Either type the number of the bulletin you want to read, or hit <RETURN> to get out of it. That's better than having to (Q)uit out of it, innit??

This is where the fun starts. Under the previous version of Maxwell House, all the sub-boards had letters, rather than names, and also had files areas associated with them. Not any more! Now they all have names, and the files areas are no longer linked to the sub-boards. As I clatter this out for your delectation, the following sub-boards are available:

General ACU APC APCW

Believe it or not, the General area is for general chat! The one we're interested in is ACU, so do (J)ump, and then enter 'ACU' when it asks which one. If you like, you can tell in 'AC' and it'll still find it, and you'll be whizzed there hyper quick. Oh, yes, this new software's tons faster than the old stuff.

Once you're there, things are much as they were before, except that the ACU sub-board doesn't have its own files area at the mo. However, I'd suggest you key <1> to join the sub-board – it means you'll be told about any new messages that have been posted since last you logged on – while you're at it, why not join General as well?

A little info on join won't go amiss – cast your eyes over this lot:

Most of the system's Yes/No prompts have been replaced with sliding menus (in ANSI mode). The default choice is set to either Yes or No depending upon the situation, with the default reflecting either the most common, or least dangerous choice at each intersection, allowing the use of the Enter key to accept the default.

First, JUMPing to a subboard in which you are not a member produces a message advising you to use the command 1-Member/Join to join the subboard. 1-Member/Join is now a public command. Users are prompted to enter an initial high message value immediately upon joining a subboard.

The NEW command has several additional options. The initial menu now looks like this:

Joined All Subboard Personal Quit

The "Joined" option is essentially the same as "All" in previous versions:it scans all joined subboards and allows reading new messages.

The "All" option is new. It visits all available subboards, whether joined or not. As we shall see, it is now possible to join and unjoin subboards during the NEW scan.

At each subboard visited by NEW, a new prompt appears:

Read Goto Next [Join UnJoin] Quit

This menu replaces the "Read new messages now (Y/N)?" prompt. The selections perform the following actions:

"Read" begins reading the subboard at the 1st new message. "Goto" prompts for a message number, and begins reading at that message. "Next" skips the subboard and continues on with the next subboard. "Join" allows you to join the subboard (if you are not already a member). "UnJoin" un-joins you from the subboard (if you are a member). "Quit" exits the command and returns to the main menu.

The Read options prompt that appears after messages are displayed has been extensively modified. The new commands are:

Again Reply Mail Forward Prev Next Goto Thread/Seqntl Other Quit

The commands Again, Forward, Prev, Next and Sequentl are the same as in version 1.77. The other commands are added or changed as follows:

"Reply" sends a public reply (when reading public messages) or a private reply when reading mail. The "Private reply?" prompt is eliminated.

"Mail" sends a private reply to a public message.

"Goto" allows you to jump directly to any message on the subboard. You are prompted to enter the message number.

"Thread" presents a new menu of options for selecting threaded messages: Next Prev Original First Quit

From this menu, select "Next" to view the next message in the reply chain, "Prev" for the previous, "Original" to jump to the original message (to

which the current message is a reply), or "First" to go to the first message in the thread.

So what about the files areas?? Well, like the sub-boards, they've got names as well. Goto <F>iles and then <L>ist, and you'll see what my bruv has provided for your delectation. I won't give you a list at the mo, cos he's changing it just about every day as he rebuilds the thing at the moment, so what I tell you now won't necessarily be what's there by the time this hits the newsstands.

What I do know is that he's bunging more file transfer protocols on there than ever before, but I think I'll still stick with Zmodem and ZMP. Those of you who don't have that will be able to get both ZMP and ANSITERM from Maxihouse, via the normal Xmodem methodology. That's been fixed as well – the previous version had a few bugs in it.

What else?? Oh, yeah! I nearly had a heart attack when I logged on the first time. My (much) older bruvver has put an autodoor program on the login sequence that prints a quote at you, and, as usual, his warped sense of humour shows through.

Some of the quotes are exactly like disastrous error messages – NO CARRIER is one, and BBS SELF DESTRUCT SEQUENCE INITIATED is another. Be warned – he's put some doozies up there, and there's no way you can avoid them!

There's another nice little touch he's added as well. As you log off, rather than a long long ANSI screen with flashing lights, there's a neat little box telling you what your statistics are – such things as your privilege level, how many times you've called, what speed you're on at – that kind of thing. It tells me I'm a Mega User. I already knew I was mega, so it comes as no surprise.

So there it is. Out of disaster comes forth a new life. I reckoned the board was getting a bit messy before, and it looks much easier to get round now, in its new, sleek, slimmed down state. Why not get logged on and have a look?? I understand even our esteemed Editor (all kneel) is running the ACU sub-board these days, so you can get some messages through to him any time you like!! How's that for service?

Hyper-Fast and Tiny

Mercury Communications has announced the release of the Mercury V.32 Modem, a high specificaton V.32 modem with Mercury access.

The Mercury V.32 Modem offers the benefits of speed and quality associated with the V.32 standard, as well as incorporating the latest data compression, V.42bis, it says here. In addition, the product has a Mercury network access facility allowing customers to gain the benefits of the higher quality transmission and lower costs from Mercury's digital network. Ooer!

Andy Gent, business development manager for Mercury DataComs, said "Combining the standards of V.32, V.42bis, very competitive pricing and an easy to use Mercury access facility means that the Mercury V.32 Modem is the most cost effective product of its type available on the market. We expect interest in this product to be considerable."

The Mercury Modem is £895 + VAT. A V.22bis version incorporating V.42bis and the Mercury access facility is £495. Give em a bell on 071 528 2000 to find out more.

Meanwhile, Andest, the company that brought you the wholly desirable Worldport 24/23 portable modem has allowed a super fast portable to escape onto the market. With V32 (that's a pretty horrendously fast 9600 bits per second to you and me) onboard, the little beastie fits neatly into your average pocket, and eats PP3 batteries like nobody's business.

I haven't managed to prise one out of Andest's corporate grip as yet, but I keep on making nuisance phone calls in the hope that somebody there will lose his or her cool and send me one to play with. Are you listening Andest?? I want one, and I want it NOW!!! (pretty please with a gorgeous big cherry on top!) I'll give it back, honest!

Now, you might be wondering what on earth I'd want with a portable modem when the 6128 I use is not exactly briefcase sized. Well, folklettes, it's quite simple. I tend to travel about a bit, and the folks I stay with when I'm out and about have already got CPCs, you see. So, I can bung a spare serial interface into my ovenight vanity case, drop the portable modem on top of it, and slip a CP/M diskypoo with ANSITERM and ZMP on it into the lipstick compartment no bother at all.

It's the work of a moment to start running up bills on my host's BT lines when I get settled at the other end, and what with the Worldport supporting acoustic cups and all, even if they're living in the dark ages with hard wired phones I can get online. Come to that, I can even slap the cups onto one of those dinky little Spenderphones and go cellular modeming if mine hosts rely on carrier pigeons. That's a trifle expensive, though, at 25p per minute, so I don't really recommend it.

Talking about new modems, our esteemed editor was at the March All Formats bash with my rapidly greying bruvver and walked away with a Datatrek 624E modem for review. Hi-Tec Modems (0733 897333) are the suppliers for this bit of kit, which was moving through the show at around the £250 mark. I've got to say the specs look a wee bit mouth – watering.

The beastie has V22bis (that's 2400 bits per second to you and me, folklettes) and MNP to level 5, from what I could gather from a highly exited CK, and, judging by the photo the Doc took, it's the kind of kit that would grace the choicest of computer desks – it's just a pity he's nicked the photo back, or I'd have shown you it. Honestly, he's got no consideration, that bruvver of mine.

These Hi-Tec bods seem to know their stuff. Steve White, the head honcho at the firm, told me that they've got a V32 unit due out a wee while later in the year, and knowing him, it'll be for next to nothing. Super stuff – I've got an EC2400 Quad modem from the firm that I've been using for simply ages, and it's anything but mickey mouse kit. In fact, at the price, I'd say it was superb stuff. I wonder if me and my bruv can talk Hi-Tec into bunging a couple of the fast units our way for the Maxwell House BBS – we could shoot all kinds of files up there for you lot to scoop down, and it would cost us lots less.

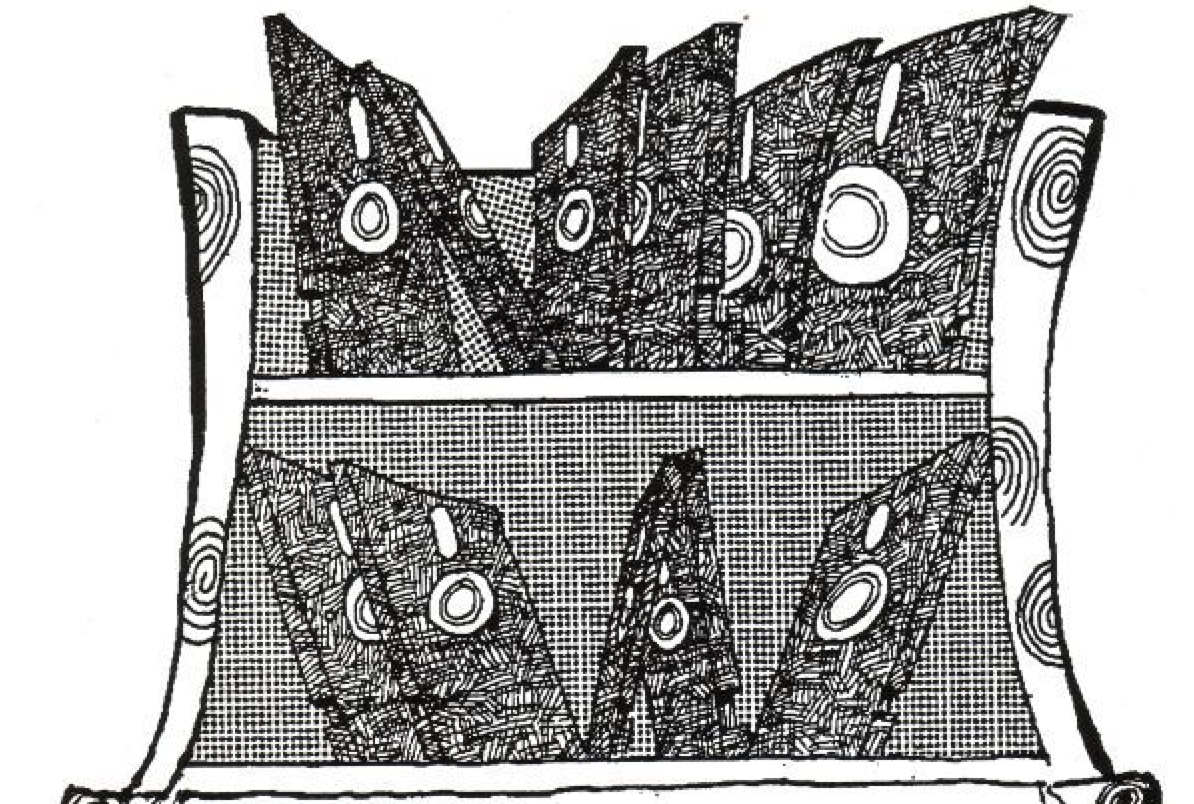
's funny that. I got talking to a guy who couldn't see the advantage in paying over five hundred beer tokens for a fast modem. It took some explaining, but the sums are a doddle, really. This chap was using a V22bis unit with no MNP on it, so the best speed he could get was 2400 bits per second – that's 240 characters per second (each character takes 10 bits to send – 1 start bit, 8 data bits, 1 stop bit). No self respecting V32 modem hasn't got at least MNP 5, and most of em have got V42 and V42bis these days – that's extremely good compression, which speeds things up enormously.

In fact, in tests, I've managed to get 27,700 bits per second effective data rates with a couple of super-modems. That's 2,770 characters per second – better than 2k per second, or over ten times faster than a V22bis modem. Think about it – if you read everything offline, your bills could be less than a quarter of what they are now!

Needless to say, the chap I was talking to nipped out and bought one sharpish!!

Well, that's it from me – let your fingers do the talking – seeya on Maxwell House (but you won't see me!)

PD Scene



Games galore get an airing this month as Paul Tint continues his foray into Public Domain

Commercial demos are few and far between on the Amstrad. For some strange reason the major software houses don't believe releasing a demo of their very latest game into the public domain is a worthwhile investment. This may be because public domain software on the Amstrad has only just taken off whereas some Amiga and ST libraries have over 1000 disks! Perhaps this will change with the release of the Plus machines?

Glenco Software, thankfully, have seen the light. Not satisfied with one demo of Sprites Alive (Space Froggy as reviewed in the December issue) they have released another TWO into the public domain.

Wipeout

The first is Wipeout, a Break Out clone. There are 20 screens in total. Each one is made up of an arrangement of bricks and three bouncing aliens. A ball whizzes around the screen destroying bricks as it goes. Life sounds easy, eh? Not quite because the ball must be deflected everytime it reaches the bottom of the playing area. Failure to do this loses one of your three bats. Play is made more interesting by icons which hide behind some of the bricks. These do various things as splitting the ball in two, glue and giving an extra bat.

Wipeout has colourful clear graphics and the ball travels quickly and smoothly without flicker. In fact, it is better than many of the budget releases of the same type of game.

Blockup

The second game, Blockup, is a version of the puzzle classic Tetris. Like the original, various shapes fall down a well. When one shape hits the bottom another starts to fall. Eventually the shapes reach the top of the well and the game is over. Your job is to prevent this happening and moving the shapes left and right trying to fill gaps left by previous shaped. If all the gaps in a line are filled then that line disappears and everything above slides down one line. The longer you can keep this up, the higher your score. It's as simple as that!

Like Wipeout, Blockup has clear colourful graphics. Although the scrolling is not perfect this does not distract from the enjoyment of the game.

Obviously the aim of both games is to show just what can be done with Sprites Alive, and Glenco have succeeded to impress me. Even if you've no interest in buying the package, get the games, they'll provide you with hours of enjoyment.

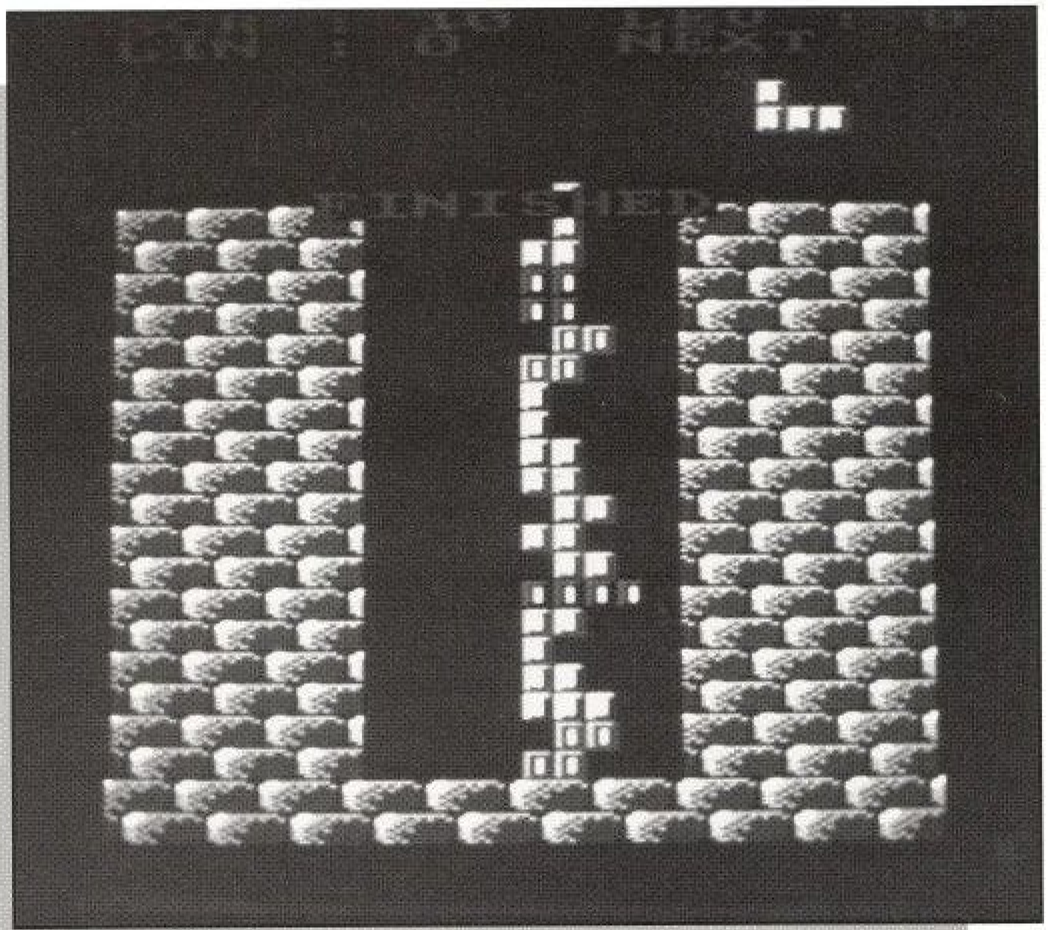
But Seriously...

Another company to release a com-

mercial demo is Serious Games. Soccer Management Simulator Demo (phew!) is a cut-down, but fully playable, version of the soccer management strategy game. Serious build the game (in their adverts) as "probably the most realistic football strategy game available for any home computer", but are they right?

The demo version allows you to manage Walsall for one season in the 4th division. Playing the game is easy since the whole thing is menu driven and any formation of players can be used. Substitutions can be made during the game and you can even tell the players where to pass!

The only let-down is the football match itself – it has no graphics. Even some matchstick men would have been nice but instead coloured lines show how the match is progressing. For me, this took the fun out of the game but if you prefer strategy rather than fancy graphics then why not try this? It's still rather good.



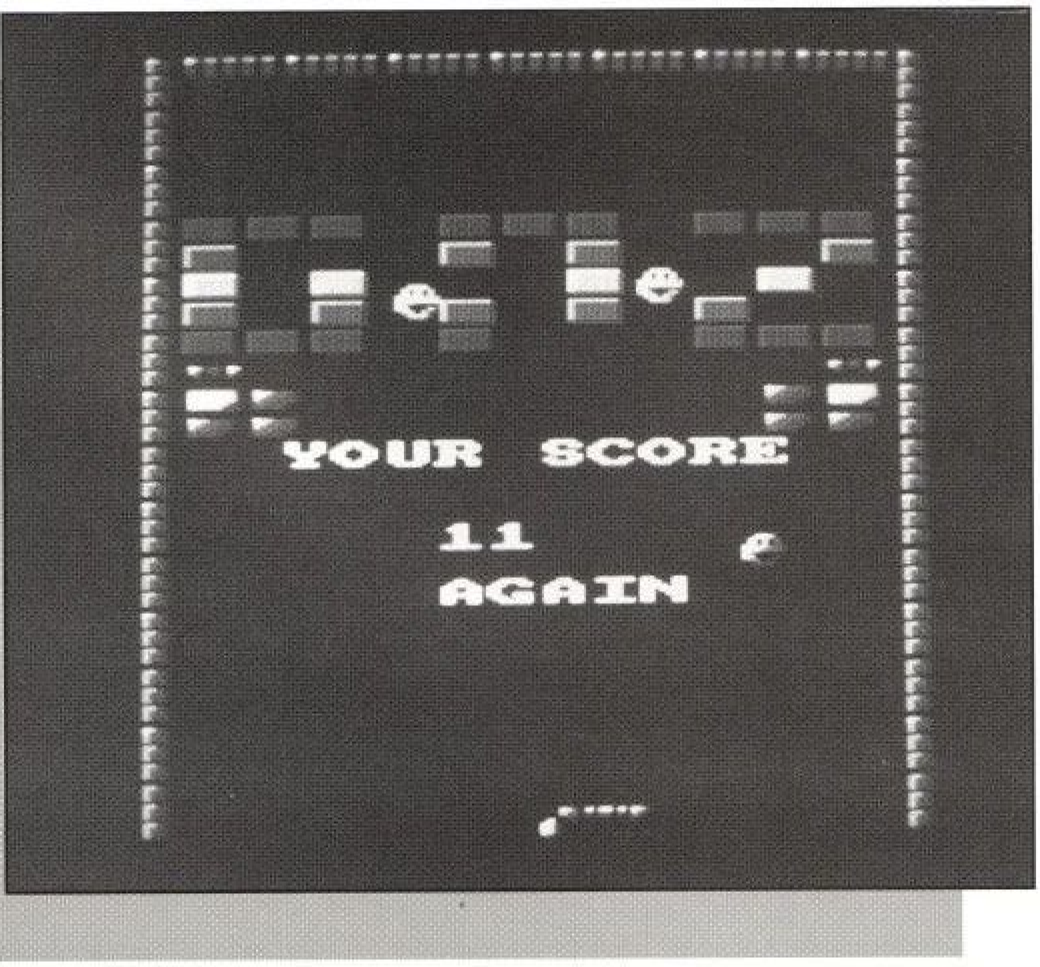
Where to go

For details of more software than you can possibly handle, contact any (or all) of the following libraries.

*** Scull PD Library, 9 Barra Wynd, Broomlands, Irvine KA11 1DB.** Now relocated in Irvine, Scull PD has over 90 disks of software including Pagemaker Plus, Clip Art and superb non PD games at PD prices! The concise stock list/newsletter is free to anyone who sens an SSAE (or 30p). To sample their varied wares, send £1, a disk, and SSAE. Please make cheques and postal orders payable to 'Alan Scully'.

*** Data PD Library, 202 Park Street Lane, Park Street, St Albans, Herts AL2 2AQ.** Data offers just over 40 disks of software, cassettes are no longer supported. Send an SSAE or 30p to receive a copy of the free Data Stock List. Alternatively you can send a disk, 50p and SSAE to receive the 'Data PD Starter Pack' which contains a mixture of programs to get you started. Cheques and postal orders payable to]Tony Kingsmill'.

*** Adventure PD, 10 Overton Road, Abbey Wood, London SE 29SD** or phone Debby on 081 310 9877. As its name suggests. Adventure PD supplies adventures only (well I never!) But it is more than just a PD library. It offers a help service, maps, solutions and non PD programs. Send an SSAE for a copy of the free catalogue. Prices are £1 per selection (one side of a disk or C60 cassette). Discs can be supplied for £2.50 each.



Get in touch

Is your library hotter than the back of my 25 year old TV? Does your software burn a hole in your computer? If so then I want to hear from you pronto. In fact, even if your programs are worse than 'Bridge-It' I want to hear from you. So pop a disk or cassette (disks have a better chance of review), your stock list and all relevant details to me (Paul Tint, in case you've forgotten) via ACU. Send an SSAE if you want your thingies returned.

You don't have to run a PD library to get in touch either. Perhaps your selling some programs at PD prices, have comments on my column or PD in general. Whatever you've got, pop me a line. It's nice to know I'm loved (ahem).

Cut price power

In which Duncan Evans gives you 24 pin printers at a glance.

At one time the choice of printer was simple. You were either rich and had a laser, or you weren't and bought a 9-pin. The emergence of the 24-pin printer offering greater quality at a mid-range price point expanded the choice but now the situation has changed yet again. 24-pin printers are the boom market and in boom markets prices come down as the competition hots up. In this survey Duncan Evans casts an eye over the best in low cost, entry level 24-pin printers to discover whether you can have your cake, and screen dump it.

Panasonic KX-P1123

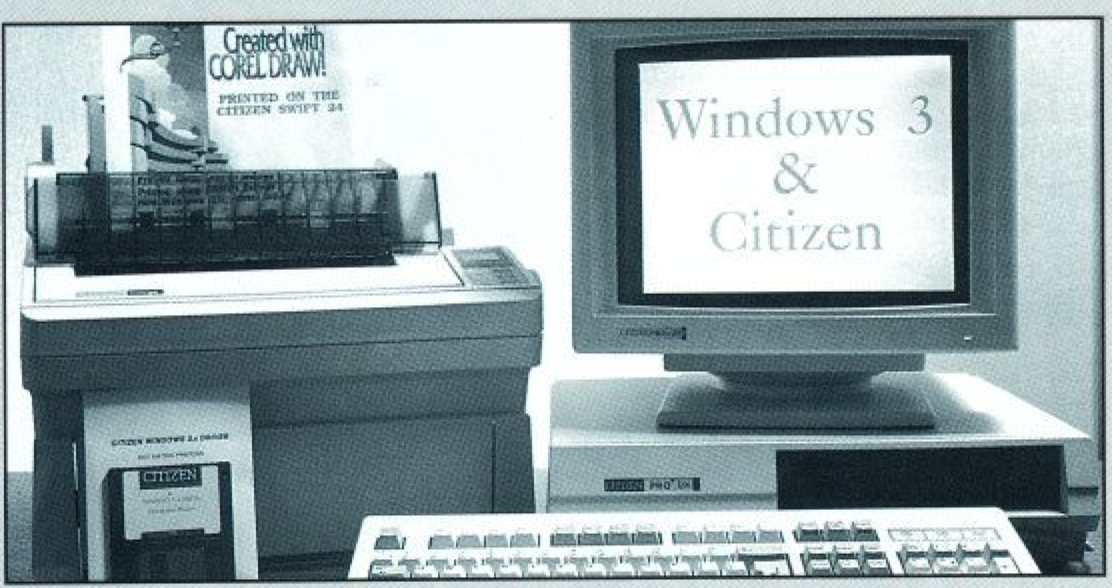
This is an attractive looking printer featuring three methods of paper feeding, a front mounted reference panel with control buttons and seven choices of built in fonts. All for £265 (plus VAT) which means you get a lot of features for your money.

The KX-P1123 has a small footprint, but instead, rears vertically. Thankfully, the control buttons and panel are mounted on a slope at the front so accessing the various functions is easy enough. Paper can be fed in from the rear, bottom or top, though it has to be said that the top single sheet feeder is not very good. While the sliding paper grips are notched to make accurate positioning easy, they do not have enclosing hands so that paper can easily fall out of position. This is allied with difficulty in feeding the sheet in (which is almost impossible unless you lift up the top cover first), and the rather dodgy automatic paper feed which sucks in a sheet and positions it at any angle it likes.



A lot of time can be wasted making sure that the sheet is set up correctly. Naturally, on tractor feed you have less problems, but then surely most people who want a 24-pin printer want to print out on decent quality paper. When you have it right, using the features on the panel is very easy once you know what you are doing. A stick on sheet on the printer gives concise instructions too, so switching between fonts and typesizes is very easy.

The print quality is pretty good for both draft and NLQ, though as usual the print speeds appear to have been arrived at after a lunchtime in the local pub. The ones we came up with were nothing like the claimed speeds. Check out the comparison table for more details.



The manual is reasonably coherent, but since the printer is easy to use you'll probably never have to look at it.

With Courier, Prestige, Bold PS and Script you have general purpose fonts for quality work, and draft pica, draft elite and draft micron for rough and ready work. The usual enhancements like double height, double strike, emphasized and so are available, and like all the other printers in this survey, the Panasonic offers 360x360 dpi on screendumps for crisp graphics.

Aside from single sheet handling, this is excellent value for money, offering good quality and varied printing, Epson LQ-850 and IBM Proprinter X24 emulations, with an attractive design and low price.

Citizen 124D

Though the 124D is intended as Citizen's low cost entry into the world of 24-pin printers, it isn't a cut down version of the excellent Swift 24, but rather a 24-pin version of the all conquering 9-pin 120D. This explains why it isn't the prettiest printer in the world, taking a decent footprint and appearing quite chunky.

It does have the Swift's superb single sheet feeding mechanism though. The feeder has overlapping arms to hold the paper correctly, while as soon as it is dropped into position, the printer feeds the sheet around to the starting position.

Tractor feed is also available, but only the push variety rather than the more precise pull.

Control is via the very simple top mounted buttons plus DIP switches in the font cartridge compartment for changing emulation. The top panel selects between draft mode, and Times or Courier, which are the only built in fonts, though four others can be added through optional cartridges.

On the noise level the 124D made a fair old racket, which was surprising considering how slow it was printing. There is a quiet mode but that slows it down even more. Print quality on the NLQ fonts was pretty good, with well defined characters, but the draft font looked particularly dotty.

Emulations include IBM and Epson, and though the printer buffer is only 8K, it can be upgraded to 40K. Other plus features include the manual, which in recent Citizen style, is by far the best from any print styles and features justified text, underscoring, one line only of expanded print as well as the regulars of double height and width etc.

The 124D is an excellent successor to the 120D, offering decent quality NLQ print, superb sheet feeding, simple use, and is highly recommended to those seeking an uncomplicated printer for general usage.

Star LC24-10

The Star has a slightly dated old fashioned look to it, with a large plastic



cover, simple button controls and wide, smooth outlines. Like the Panasonic this has a fixed lead coming from the rear, and like the Citizen it has a decent quality sheet feeder along with a tractor feed.

The tractor feed is nicely tucked out of the way inside its own cover until needed and with the controls mounted on top of the printer, access is not a problem. The single sheet feeder is, as I have said, similar to the Citizen, and the semi-automatic feeder almost as good, positioning the paper correctly virtually every time. You can feed manually or use the paper feed button, but this is inadvisable as it almost always goes wrong.

There are four built in fonts, all standard: Courier, Prestige, Orator and the increasingly popular Script, along with a credit card style slot for extra ones. An interesting extra on the simple panel is the addition of italics to be combined with any of the fonts. Some costs have been cut inside the panel because four lights cover six options, and they tend to glare into the adjacent positions.

Print quality is good, being almost identical to the Panasonic on NLQ and the Citizen on draft. However speed was something else. The claims from the manufacturer are rather exaggerated as you will see from the comparison table, with draft coming out so badly as to make it a waste of time using it. The small 7K buffer doesn't help matters, but it can be expanded to 39K and in NLQ mode the Star performed as well as the others and better than the Citizen. This is a well built, solid, all round printer with only one flaw, (draft speed), but not a vital flaw, and has enough variety of fonts and quality of paper feeding to gain our recommendation.

Seikosha SL-92

First impressions reveal a small and lightweight printer, bordering on the flimsy. Everything about the SL-92 says 'modern but cheap' but there are surprises in store. Although only two fonts are supplied with the Seikosha, a plug in cartridge adds an extra seven, which are well worth having.

Single sheet or tractor from the top is the paper option, but care must be exercised when feeding single sheets as the feeder has simple arms which let the paper flop forwards. Once positioned, pulling back the bail bar automatically feeds the paper into position. While not quite up to Citizen standards this is still quite good.

What is strange about this printer is that instead of an LCD display or a series of lights, the SL-92 uses the transparent cover and print head to point to the current font and pitch. These are printed on the top of the cover, all nine of them, even if you only have access to two. Simply by using the top mounted buttons the font can be changed at will.

Some of these are rather nice, and the inexpensive range includes Courier (supplied), Gothic, Orator, Prestige Elite (supplied but ghastly), Script, OCR-A, OCR-B, Roman and Helvetica.

Actual print quality is not bad in NLQ but poor in draft. Which partly explains why this printer was noticeably faster than the other three. It also makes a fair bit of noise in operation as well, but at least it has an excuse.

The only emulation is Epson LQ and once again it's a fixed lead from the back rather than a Euro connector. Speaking of the back, the Centronics interface is located there, but underneath a large and two inch deep overhang. You have to tilt the thing on it's front in order to plug in initially, but I suppose it's out of the way from then on.

As long as care is taken with the printer it works well and fast, and even if the quality is not quite up to the other three in the survey, the speed and excellent font options, as well as nifty convenience (being light, small and easy to use) make up for it.

Conclusion

Which low cost 24-pin printer do you buy is the question, and the answer is...Any of them. The Panasonic is the most feature filled, most stylish, has good print quality and would be an unreserved number one recommendation, if it weren't for that awful single sheet feeding. Either take great care or use the tractor only. If your work will be predominantly with tractor fed paper then go for this one.

The Citizen 124D almost gets there thanks to excellent manual, good print quality and superb single sheet feeding. Unfortunately, it doesn't have that many built in fonts or look too stylish, but that aside is worthy of your consideration.

Perhaps the Star is the overall winner because for all round performance with sturdy construction and efficient paper control this is just the ticket. In fact if it's an all round performer you want then go for this one.

Finally, if you haven't much desk space, like to use plenty of interesting fonts, and want something a bit quicker than the others then the inexpensive Seikosha and its extra fonts come into contention.

Notes: Print quality ratings for draft and NLQ are entirely a personal view scored out of ten. The scores for each category do not correspond as draft is not designed to compete with NLQ. The actual speeds listed were arrived at by timing the printing of 1000 characters complete with carriage returns to give the average speed when printing out say a short letter. You should note that if you simply print a block of 1000 continuous characters then you"ll get a faster but misleading speed rating.

Comparison Table

Features	KX-P1123	124D	LC24-10	SL-92
NLQ Fonts	4	2	4	2
NLQ Resolution	30x24	36x24	35x24	36x17
Buffer Size	10K	8K	7K	8K
Max Buffer	42K	40K	39K	40K
Colour Option	NO	NO	NO	NO
Draft Speed				
Claimed (cps)	160	120	180	240
Actual (cps)	90	71	55	85
NLQ Speed				
Claimed (cps)	53	40	50	66.7
Actual (cps)	35	30	35	48
Print Quality				
Draft	7	6	6	4
NLQ	7	8	7	6
Price (ex VAT)	£265	£289	£259	£249
ACU Rating	71%	74%	81%	70%

Taming the variables

Ease away those programming blues with Glynne Davies and a handful of arrays

There is often a time in programming a computer where a number of variables are required which are related to each other. A database type program has an amount of records, each record being divided into a number of fields, the record may appertain to a certain person, the fields being the person's Surname, Forename, Address and Telephone number etc. An array is a special type of variable which has a number involved within it's name, this number can be changed using a loop therefore changing the name of the variable. i.e. For three string variables:- name$(1) name$(2) name$(3) or three numeric variables number(1) number(2) number(3).

The number within brackets is called a subscript and the subscript can easily be changed using a loop, you write a piece of code to Enter or display the fields within a record and place a loop around this code for the amount of records. i.e. To Enter a variable into an array.

```
10 loop=1
20 INPUT name$(loop)
```

To Enter 1000 names

```
10 FOR loop=1 TO 1000
20 INPUT name$(loop)
30 NEXT loop
```

The program above will not work as it stands because of the vast potential memory required for the array, the Basic language has a system of reserving space for arrays which must be stated before the array is used, the line 5 DIM name$(1000) would be required, reserving space but reducing the space available for your program. Care should be taken with DIMensioning an array to ensure that adequate space is available for the program, this is usually a compromise.

The following program asks for ten names to be entered and then displays these names in the reverse order to which they were Entered. Note the subscript starts at 0 (zero), if we neglected this as above (FOR loop=1 TO 1000) one string space would be reserved but not used. Line 30 adds 1 to the subscript to make it more humanly acceptable, when displaying name number.

NEW KEYWORD

DIM array(n) DIMension an array to reserve space, n is the amount of variables plus 1. If you wish to Dimension more than one array you can separate them using a comma i.e. DIM num(100), name$(50)

```
10 REM Single Subscript String Array
20 CLS:DIM name$(9):REM Reserve 10 string spaces name$(0) name$(1) etc
30 FOR subscript=0 TO 9:REM A loop of ten
40 PRINT “Enter name number “;subscript+1;">";:INPUT name$(subscript)
50 NEXT subscript
60 PRINT “This is the list in reverse order"
70 FOR subscript=9 TO 0 STEP –1
80 PRINT "Name number"; subscript+1;"="; name$(subscript)
90 NEXT subscript
100 END:REM Note when the program has finished you can check a variable in direct mode i.e. PRINT name$(5)
```

Arrays can be set up with a number of subscripts, the first subscript could be used as the record number and the other subscripts the fields. i.e. DIM grid (19,9), this would give you 20 records 0-19 each record having 10 fields 0-9. grid (0,0) grid (0,1) grid (0,2) etc. You could have an array dimensioned DIM multysub$ (9,5,7,12,14) but beware this would reserve 10x6x8x13x15 string spaces (more space than the CPC has). NOTE If the 0 subscript had been avoided in the last example the wasted string space would have been 6x8x13x15 string spaces!.

A Simple Database

```
10 REM A Double subscript array
20 MODE 1
30 DIM inform$(3,2): REM Four records 0-3 and 3 fields 0-2
40 FOR record=0 TO 3:REM 4 records
50 CLS: LOCATE 14,1: PRINT “RECORD NO. ";record+1
60 LOCATE 5,8:INPUT "Enter the Surname ";inform$(record,0)
70 LOCATE 3,10: INPUT "Enter the Firstname ";inform$(record,1)
80 LOCATE 3,12:INPUT "Enter the Telephone ";inform$(record,2):REM Note a telephone number is not a number but a code.
90 NEXT record
100 REM Display the array
110 CLS
120 FOR display=0 TO 3
130 PRINT inform$(display,1); " ";inform$(display,0);" ";inform$ (display,2) :REM Display Firstname Surname and telephone number
140 PRINT:REM Place a space in between
150 NEXT display
160 END
```

Exercise

Convert the double subscript program to have 10 records and include an extra field, the persons date of birth.

Sorting Data

It is often necessary within a database type program to sort the data alphabetically or numerically into order. A sort can be achieved in many ways on a

computer, two of which are listed below, it is worth analysing how you would sort data yourself. Take a pack of cards and sort them into suits in the order Hearts, Diamonds, Clubs and Spades each pack starting at the Ace(1) up to the King(13).

Now the computer can only compare one item to another and state if they are equal, greater than or less than (= > <) and of course can not recognise a Heart or Club. The data would need to be organised in a way suitable for the computer and then a simple sort could be used to sort in numeric order. i.e.

Hearts 1 to 13 Diamonds 14 to 26 etc. When you sorted out the suits you probably spread the cards and form a separate pile which was in order, this is similar to the second sort, the Insertion sort. The first sort however is a Bubble sort, named because of the effect of the lower item rising to the top, like bubbles of air through water, the main advantage from a computer's point of view is that it uses only *the* one more extra piece of memory.

String comparisons used in IF/THEN statements

IF first$=second$ THEN

= Equal, is one string equal to the other string.

> Greater Than, is the first string lower down the alphabet than the second string.

< Less Than, is the first string higher up the alphabet than the second string.

NOTE: The ASCII codes are used to compare strings. Capital A-65, lower case a=97, therefore ZZZZ would be Less than aaaa. When sorting ensure that either all strings compared are in upper case or all in lower case.

Bubble sort

Type in and Run the following program

```
10 REM with demo
20 REM Sort into alphabetical order
30 CLS:INPUT "Enter the amount of names ";n%:n=n%:REM n% ensure n is a whole number.
40 DIM name$(n)
50 FOR loop=1 TO n:REM name$(0) is left out for convenience
60 PRINT "Enter name number ";loop;:INPUT name$(loop)
70 NEXT
80 PRINT
90 GOSUB 130:REM use the Bubble sort routine
100 PRINT:PRINT "Sorted list"
110 FOR screen=1 TO n:PRINT name$(screen): NEXT:REM Display sorted list
120 END
130 REM Bubble sort routine
140 FOR loop1=1 TO n-1
150 FOR loop2=loop1+1 TO n:REM always start one lower than the loop at 140
160 PRINT "Is ";name$(loop1);" > ";name$(loop2);
170 REM change the > for < to sort Z to A: for numbers use numeric variables
180 IF name$(loop1)>name$(loop2) THEN dummy$= name$ (loop1): name$ (loop1)= name$(loop2): name$ (loop2)= dummy$:PRINT " Yes swop positions";
190 PRINT
200 NEXT loop2: REM check all other names against loop1
210 NEXT loop1
220 RETURN: REM Sort completed
```

If you understand how this bubble sort works remove lines 160, 190 and :PRINT "Yes swop positions"; from line 180, this type of sort is ideal for small quantities but you will notice that if you double the number of items sorted the time taken to complete the sort is quadrupled (4 times the length). The bubble sort always checks all the items even if the data is already sorted.

If you are still having difficulties with the logic of the bubble sort, take one suit from your pack of cards, remove the Jack, Queen and King and shuffle the number cards. Hold the cards face up, take the top card and compare it to each of the others in order i.e. 2nd 3rd 4th if any of the other cards are lower than the first card swop the lower card for the card you have in your hand. Continue comparing to the bottom of the pile with your new card, swopping if necessary. When you reach the bottom you will have the Ace(1) in your hand, place this face down in front of you. Now the second loop, take the top card from your pile, the second card down originally and repeat the process, at the end of the second loop you will have the 2 to place face down on the Ace. Continue the process until all the cards are face down and sorted.

Insertion Sort

An Insertion sort sets up another array into which items from the list are placed. Line 140 sets the first string in the insertion array to the first name and from then on each data item is placed into the insertion array either before the first item if lower or after the item if higher. When an item is to be placed between two other items it is necessary to make a space for it, this is achieved at the sub-routine starting at line 270.

```
10 REM Insertion sort using sub-routines
20 REM Sort into alphabetical order
30 REM The insertion sort takes names from the original list and places them into another list inserting the name between others if necessary
40 CLS:INPUT "Enter the amount of names ";n
50 DIM name$(n),s$(n+1)
60 FOR loop=1 TO n
70 PRINT "Enter name number ";loop;:INPUT name$(loop)
80 NEXT
90 GOSUB 130:REM Sort the data
100 FOR scrren=1 TO n:PRINT name$(screen);" ":s$(screen): NEXT: REM Show the original and the sorted arrays
110 END
120 REM ********************
130 REM Insertion sort
140 s$(1)=name$(1):REM s$(1) is the insertion array
150 b=1
160 FOR a=2 TO n:REM Start from the second string.
170 IF name$(a)>=s$(b) THEN GOSUB 210: ELSE GOSUB 270: REM Go to Sub-routine 210 if name$(a) is greater or equal to s$(b), Sub-routine 270 if lower.
180 NEXT a
190 RETURN
200 REM ***********************
210 REM name$(a)>s$(b)
220 b=b+1
230 IF b<=a THEN a=a-1;RETURN; REM Increase b but keep a the same
240 s$(b-1)=name$(a):b=1
250 RETURN
260 REM ************************
270 REM name$(a)<s$(b). from a-1 move all the s$'s to provide a space
280 FOR c=aa-1 TO b STEP-1
290 s$(c+1)=s$(c)
300 NEXT c
310 s$(b)=name$(a):b=1
320 RETURN
```

Exercise

Write a set of names to use as test data and compare the difference in speed between the Bubble sort and the Insertion sort, try also a list in alphabetical order to compare times. The speed of the machine is always tested when carrying out sorts and in most cases sorting routines for a large quantity are written in machine code.

Next month I'll be looking at file handling, the ability to save the information held in an array onto disc/tape.

continued on page 48 ►

◀ continued from page 47

you can use it the next time or transfer the information to another program.

As usual to end this month here is example of the use of an array.

Sideways printing

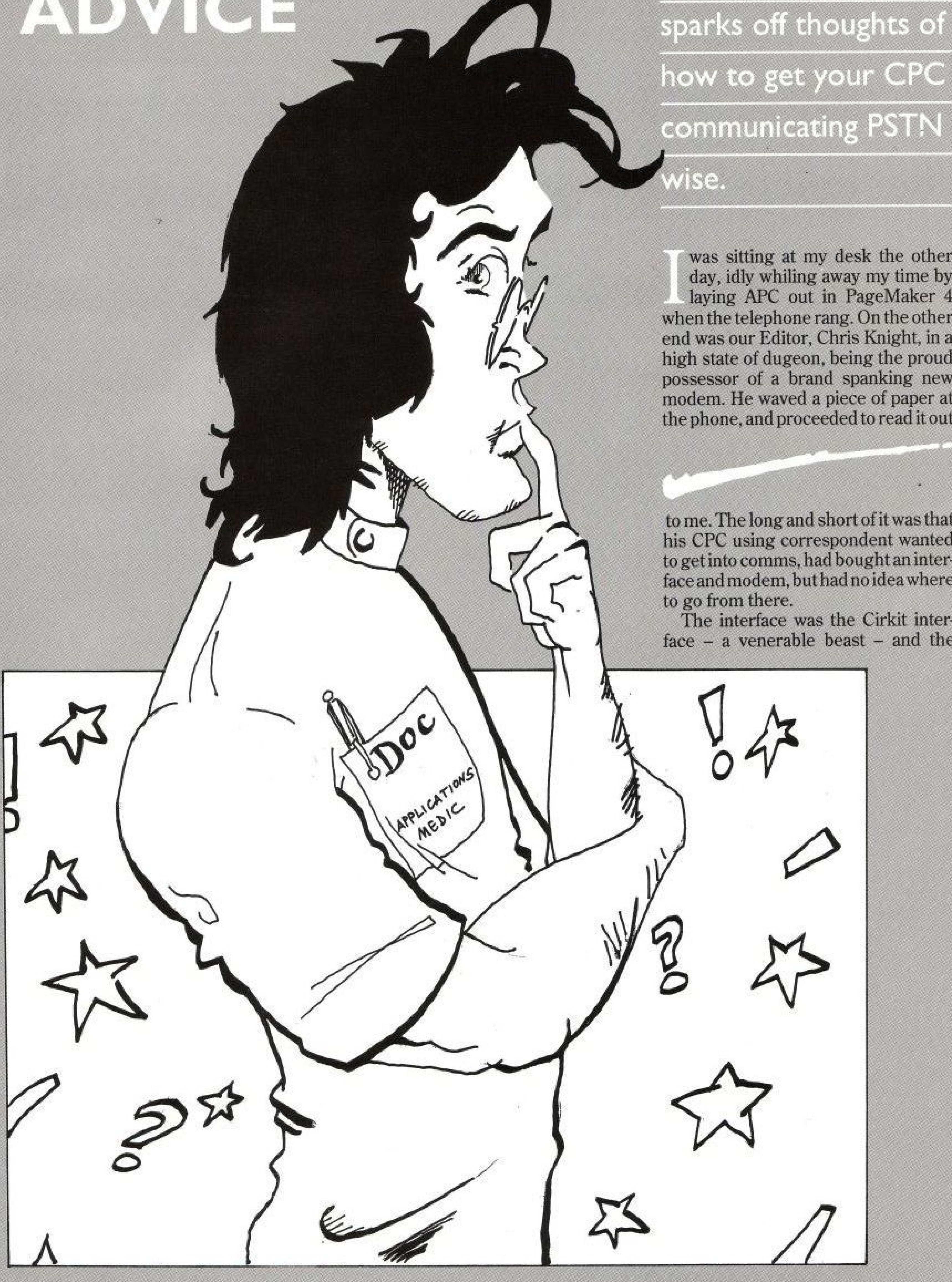
The width of a printer is limited to the physical size of the printer, but if the printer is made to print the characters on their side there is only the paper length that restricts the size. This program takes a string, places it on the screen and using the keyword TEST scans the characters vertically. A copy of the eight vertical pixels is made using a character to represent each pixel, if the pixel is lit then it is represented by an "0", if not lit a space " ", this is for a size of 1.

Each of these strings are held in an array, if a one character string were entered, an eight string array would be produced. I have given the option to display the information on the screen as it would be printed for those without printers. If you have a printer this program is ideal for producing long banners for advertising or if the original string were built from graphic characters (Press CTRL with a character) for decoration. If you have a colour printer try changing the colour. (PRINT #8 sends the information to the printer)

```
10 REM Sideways printing (large scale)
20 MODE 1
30 WHILE name$=""
40 INPUT "Type in the word or sentence ";name$
50 IF LEN (name$)>40 THEN PRINT "Below forty characters please":name$=""
60 WEND
70 INPUT "Type in the size 1-8"; size%:size%=MIN (8,MAX(1,size%)) :REM numeric input check size% will be 1 if a lower input and 8 if above 8 is input.
80 tba=(8-size%)*4+8:REM tabulation size tba
90 CLS:PEN1
100 array=LEN (name$)*8:DIM name$(array+1): REM dimension array to 8 times the amount of characters
110 FOR n=1 TO size%:word$=word$+"0": blank$=blank$+" ":NEXT
120 IF size%=1 THEN size%=2
130 PRINT name$
140 REM The words are printed on the screen and then scanned and strings set up for each vertical pixel column.
150 FOR x=1 TO LEN(name$)*16 STEP 2
160 inc=inc+1
170 FOR y=384 TO 400 STEP 2
180 IF TEST (x,y)=1 THEN name$(inc)=name$(inc)+word$ ELSE name$(inc)=name$(inc)+blank$
190 NEXT
200 NEXT
210 MODE 2:REM Switch to 80 Column, the same as most printers
220 WHILE pass=0
230 PRINT "Press S for Screen P for Printer or B for Both":WHILE k$="":k$=INKEY$:WNED:REM wait for keypress
240 k$=UPPER$(k$):IF k$="S" OR k$="P" OR k$="B" THEN pass=1
250 WEND
260 IF k$="P" OR k$="B" THEN PRINT #8,CHR$(27);"3";CHR$(16)
270 FOR n=1 TO inc
280 FOR q=1 TO size%-1
290 IF k$="S" OR k$="B" THEN PRINT TAB(tba);name$(n):REM screen print
300 IF k$="P" OR k$="B" THEN PRINT #8, TAB(tba); name$(n): REM send to printer
310 NEXT
320 NEXT
330 IF k$="P" OR k$="B" THEN PRINT #8,CHR$(27);"2":REM reset printer to normal
340 END
```

APPLICATIONS ADVICE

The Doc has a letter quoted to him which sparks off thoughts of how to get your CPC communicating PSTN wise.



I was sitting at my desk the other day, idly whiling away my time by laying APC out in PageMaker 4 when the telephone rang. On the other end was our Editor, Chris Knight, in a high state of dugeon, being the proud possessor of a brand spanking new modem. He waved a piece of paper at the phone, and proceeded to read it out to me. The long and short of it was that his CPC using correspondent wanted to get into comms, had bought an interface and modem, but had no idea where to go from there.

The interface was the Cirkit interface – a venerable beast – and the

modem was fairly nondescript, but typical of the early 'autodialing' types. That is to say it wasn't of the Hayes compatible ilk, but rather dialled by toggling the RTS line, much the same as rotary dial telephones send their pulses down the line to the exchange.

'You have to write a piece in very simple terms, explaining how to get a CPC online' said CK, who seemed to have a little bit of a vested interest in what he was saying. So here it is.

Broadly speaking, what you need to perform the feat amounts to very little in the way of complexity. The CPC has no RS232C (serial) interface of its own, so you need to add one to it. My preference has long been for the Pace unit, but the Cirkit one will do quite nicely, as will the Maplin kit unit or the KDS interface (if you can find one).

Next, you need the modem. My own preferences are, realistically, some way beyond the hobbyist, but then I need exceedingly fast modems to do my work. For the beginning communicator, a simple, cheap Nightingale or Linnet from Pace will do the job, or one of the Hi-Tec range of modems, which are very well priced – I do believe Gordon has mentioned these in his column this month.

Between the two goes a serial lead, which, if you can, you should buy with the interface, as then it ought to be matched to it – each interface is somewhat different from the others, and one or two of them have strange needs. Of the bunch, the KDS and Pace units seem the most straightforward.

The final link in the chain is the software. Here again, the KDS and Pace units come with very capable software built in, but your preferences may lie with more modern code, in which case Gordon has had some sage words to say regarding ANSITERM and ZMP.

Setting the whole thing up is straightforward enough – the interface is connected to the CPC's expansion port, the lead is connected to the interface, the modem is connected to the lead, and then the modem is connected to the telephone jack via its lead. I was tempted to burst into 'them bones, them bones' here, but I won't!

The last stage is to configure the software. Now, for general purpose work, at least until ZMP came onto the market, the majority of CPC comms writers have recommended MEX as the software of choice, and since it's the most readily available, it's the one I'll deal with here.

MEX runs under CP/M, and is more or less self-configuring. If you source it from WACCI, who have a disc aimed especially at comms, you will find at least two versions of it on the disc you get for your money. One will be a HAYES version, and the other a simple manual or RTS pulsing version. You need to identify which type of modem you have in order to decide which one to load, which is where a session with the manual helps. If it's full of 'AT' commands (like ATD to dial) then you use the Hayes version (often called HAYESMEX). If not, then assume a simple modem, and use the straight MEX. KDS interface users need KDSMEX, which I believe also comes on the WACCI disc.

As you boot MEX, you will get a sign on message and a few lines of text which you can safely disregard for our purposes. Some versions that you get from friends may be pre-configured with a dialling directory, in which case its operation is self explanatory and straightforward. Those people might like to stay with us for a while yet, though!

At this point, type 'SET 12/75' or 'SET 1200' which will tell both MEX and the modem what speed you intend to work at. Then type 't' and press return, which will put you into 'terminal mode' – or the mode which allows you to communicate with the modem, and thus the outside world. If your modem is a Hayes type, type the following:

AT0718281577

Followed by a carriage return. The modem will dial the number contained in that string, which will connect you to the Maxwell House Bulletin Board.

If your modem is NOT a Hayes type, you may either need to dial the number on the telephone, and listen for a high pitched whistle, then push the 'ON-LINE' or 'DATA' button on the modem, or use the dialling facility within MEX. To do this type (on most versions that I've seen) DIAL 0718281577, and MEX will see to the rest, and drop you into terminal mode when it's finished dialling. The DATA switch on your modem needs to be ON for this to work.

Candidly, if you're considering getting started, and you have no modem yet, I'd plump for the Hayes type – it's much easier to use!

Eventually, both types of user will hear either an engaged tone (quite likely) or the high pitched whistle I mentioned, followed by a screeching scratching sound, which indicates that the modems have synchronised, and communication is about to begin.

I need take this no further, as, if you turn swiftly to Gordon's pages, you will find a complete guide to what to do next on Maxwell House, with the exception of getting MEX to transfer a file.

Send me, send me!

This is actually a very simple process, which people sometime complicate by forgetting to load the CP/M keyboard driver with SETKEYS KEYS.CCP before calling MEX. If you've done that, after you've decided which file you want to download from Maxwell House, press <ESC><E>, which takes you to command mode. The receive file command is RX <DRIVE> <FILENAME> <EXTENSION>, like so:

rx a:myfile.ext<CR>

where <CR> means tap the RETURN key.

Once you do that, MEX sorts itself out, and starts talking to the BBS, which you will have already told to use Xmodem CRC to send you the file. The two swap a little information, and then get on with the job in hand.

To SEND a file to the BBS, you first need to tell it to use Xmodem CRC (which it will already know as a default), tell it the name of the file you're going to send, and then tell it to get ready – all very simple to do. Then it's the <ESC><E> combination again, and this time SX <DRIVE><FILENAME> <EXT>. MEX will find the file, and send it to the BBS.

All Finished.

The last job is to log off from the system, and, thankfully, Maxwell house takes care of this for you, so there's nothing to learn, except how to get back to command mode, and from there into CP/M (other than using <CTR><SHIFT><ESC>!) Again, <ESC><E> gets you into command mode, and the command SYSTEM takes you back to CP/M.

My suggestion is that you use what you've read here to log onto Maxwell House and download ANSITERM and ZMP, which offer far superior facilities to MEX in terms both of what you see on your screen and how you download files.

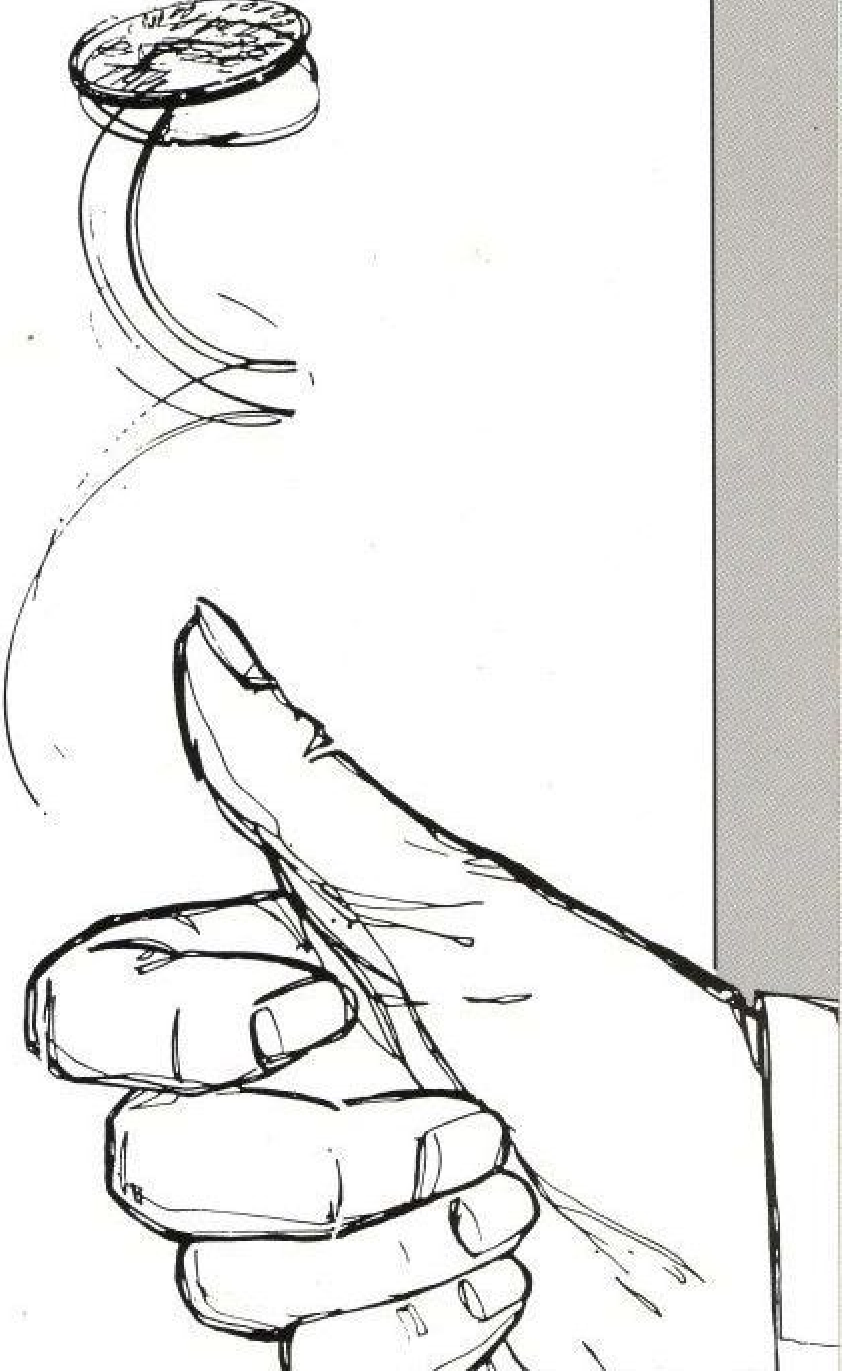
Whichever you choose, enjoy your comms. It's a growing part of the computer world, and visiting BBS sytems, both commercial and private has much to recommend it as an enjoyable and relaxing hobby.

Until next month, take care!!

SHOPPING MASTER

BY
ALAN
KENNEDY

After last month's little confusion, here's a little something Mr Kennedy's put together to help you out before you set off for the supermarkets. Just enter the amount of money you've got to spend, check off each item you need and this excellent routine will allow you to print out an itemised shopping list, prices and all, as well as showing you if you've got a little something left over for some goodies on top. Try it, it's not bad at all.

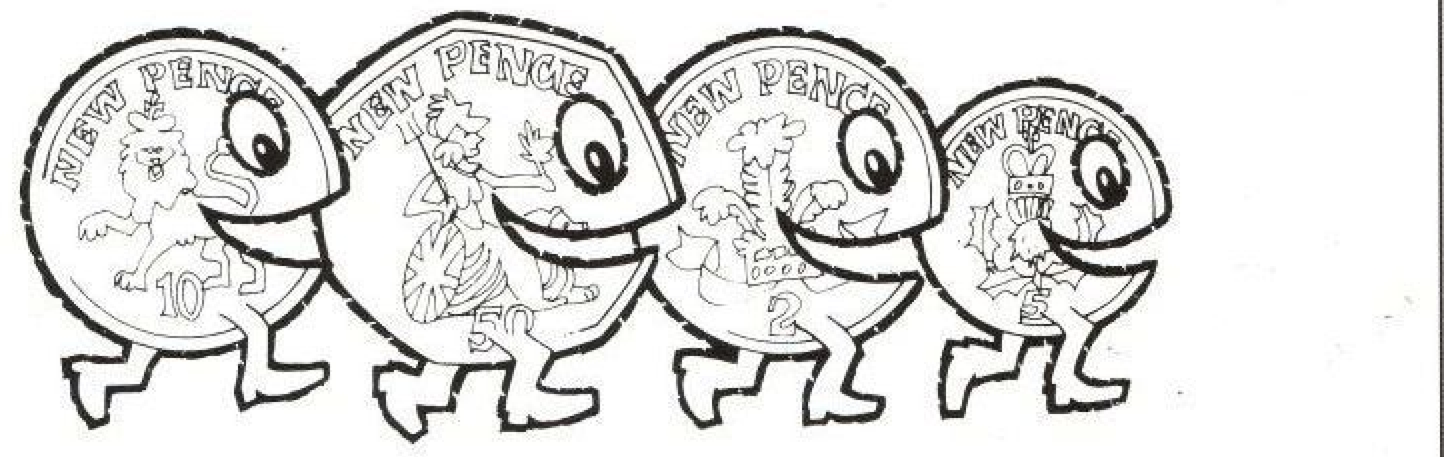


```
1 ' SHOPPING MASTER
2 ' WRITTEN & PRODUCED BY A KENNEDY (c) 1991
3 y=0
5 DIM it$(50)
6 DIM ip(50)
7 GOTO 9900
10 MODE 1:INK 0,0:INK 1,26:INK 3,26,20:
15 RESTORE 30
20 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "#
":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT "
*":NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT
"*":NEXT
24 LOCATE 10,4:PEN 3:PRINT " SHOPPING MASTER "
25 FOR x=1 TO 7:READ x$:PEN 1:LOCATE 4,6+(x):PRINT
 x") ";x$:NEXT
30 DATA ENTER START AMOUNT,ENTER DETAILS,DISPLAY D
ETAILS,LOAD DETAILS,SAVE DETAILS,EXIT PROGRAM,PRIN
T DETAILS TO PRINTER
40 PEN 1:LOCATE 5,20:PRINT "Which option (1-7) "
41 b$=INKEY$
45 IF b$="" THEN 46 ELSE 70
46 b$=INKEY$:IF b$="1" OR b$="2" OR b$="3" OR b$="
4" OR b$="5" OR b$="6" OR b$="7" THEN 70 ELSE:f$="
Shopping Master Written by Alan Kennedy (c) 1991
      ":FOR f=1 TO LEN(f$):PEN 3:LOCATE 4,24:CALL
&BD19:PRINT MID$(f$,f,34):NEXT:IF b$="" THEN 46 EL
SE 70
70 IF b$="1" THEN 9945 ELSE IF b$="2" THEN 100 ELS
E IF b$="3" THEN 200 ELSE IF b$="4" THEN 300 ELSE
IF b$="5" THEN 400 ELSE IF b$="6" THEN 600 ELSE IF
 b$="7" THEN 700 ELSE 40
100 REM -- This is the entering data section --
102 SOUND 1,200,155
105 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT
"*":NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT
 "*":NEXT:LOCATE 10,4:PEN 3:PRINT " SHOPPING MASTE
R "
106 IF a=0 THEN 107 ELSE 110
107 CLS:PEN 1:LOCATE 4,6:PRINT "<No money left to
use for shopping>":PEN 2:LOCATE 12,25:PRINT "Press
 any key":CALL &BB18:GOTO 10
110 FOR d=1 TO 50
111 PEN 1:LOCATE 6,20:PRINT"Items so far ";y:PEN 1
:LOCATE 6,22:PRINT "Amount you have to spend ";USI
NG "£###.##";a
112 CLEAR INPUT:PEN 1:LOCATE 2,6:INPUT" ITEM NAME
";it$(d)
113 IF it$(d)="" THEN CLS:GOTO 130
114 CLEAR INPUT:PEN 1:LOCATE 2,8:INPUT " ITEM PRIC
E ";ip(d):a=a-ip(d):y=y+1:IF a=0 THEN 107:CLS:FOR
t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "#":NEXT:FOR
```



```
t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT "#":NEXT
115 FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT "*":N
EXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT "*":
NEXT:LOCATE 10,4:PEN 3:PRINT " SHOPPING MASTER "
120 NEXT:CLS:GOTO 10
130 SOUND 1,200,155:PEN 1:LOCATE 12,6:PRINT " <No
More Input> ":PEN 2:LOCATE 12,20:PRINT " <<Press a
ny key>> ":CALL &BB18:GOTO 10
200 REM -- This is the display data section --
202 SOUND 1,200,155:IF it$(1)="" THEN CLS:PEN 1:LO
CATE 12,6:PRINT " <No Data To Display> ":PEN 2:LOC
ATE 12,20:PRINT " <<Press any key>> ":CALL &BB18:G
OTO 10
205 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT
"*":NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT
 "*":NEXT:LOCATE 10,2:PEN 3:PRINT " SHOPPING MASTE
R "
210 PEN 1:LOCATE 2,4:INPUT "DISPLAY TO [S]creen OR
 [P]rinter ",u$
225 IF u$="" THEN GOTO 210
230 IF u$="S" OR u$="s" THEN 235
231 IF u$="P" OR u$="p" THEN 700
232 IF u$="R" OR u$="r" THEN 20
235 CLS:PEN 1:LOCATE 5,4:PRINT " ITEM NAME ":LOCAT
E 20,4:PRINT " ITEM PRICE "
240 FOR k=1 TO 10:FOR r=1 TO 10:PEN 1:LOCATE 2,6+(
r*1):PRINT k:PEN 1:LOCATE 6,6+(r*1):PRINT it$(k):P
EN 1:LOCATE 22,6+(r*1):PRINT USING "£###.##";ip(k)
:k=k+1
250 NEXT:NEXT:P1=ip(1)+ip(2)+ip(3)+ip(4)+ip(5)+ip(
6)+ip(7)+ip(8)+ip(9)+ip(10):PEN 1:LOCATE 12,22:PRI
NT "SUB TOTAL ";USING "£###.##";P1
255 IF it$(11)="" THEN PEN 1:LOCATE 10,24:PRINT "T
OTAL AMOUNT ";P1:PEN 2:LOCATE 10,20:PRINT " <<PRES
S ANY KEY>> ":CALL &BB18:GOTO 10: ELSE PEN 2:LOCAT
E 10,20:PRINT " <<PRESS A KEY>> ":CALL &BB18:GOTO
260
260 CLS:PEN 1:LOCATE 5,4:PRINT " ITEM NAME ":PEN 1
:LOCATE 20,4:PRINT " ITEM PRICE "
270 FOR e=11 TO 20:FOR p=1 TO 10:PEN 1:LOCATE 2,6+
(p*1):PRINT e:PEN 1:LOCATE 6,6+(p*1):PRINT it$(e):
PEN 1:LOCATE 22,6+(p*1):PRINT USING "£###.##";ip(e
):e=e+1
275 NEXT:NEXT:P2=ip(11)+ip(12)+ip(13)+ip(14)+ip(15
)+ip(16)+ip(17)+ip(18)+ip(19)+ip(20):PEN 1:LOCATE
12,22:PRINT "SUB TOTAL ";USING "£###.##";P2
280 IF it$(21)="" THEN PEN 1:LOCATE 10,24:PRINT "T
OTAL AMOUNT ";P1+P2: THEN PEN 2:LOCATE 10,20:PRINT
 " <<PRESS ANY KEY>> ":CALL &BB18:GOTO 10: ELSE PE
N 2:LOCATE 10,20:PRINT " <<PRESS A KEY>> ":CALL &B
B18:CLS:GOTO 281
281 CLS:LOCATE 5,4:PRINT " ITEM NAME ":LOCATE 20,4
:PRINT " ITEM PRICE "
285 FOR j=21 TO 30:FOR p=1 TO 10:PEN 1:LOCATE 2,6+
(p*1):PRINT j:PEN 1:LOCATE 6,6+(p*1):PRINT it$(j):
LOCATE 22,6+(p*1):PRINT USING "£###.##";ip(j):j=j+
1:NEXT:NEXT:P3=ip(21)+ip(22)+ip(23)+ip(24)+ip(25)+
ip(26)+ip(27)+ip(28)+ip(29)+ip(30)
286 LOCATE 12,22:PRINT"SUB TOTAL ";USING "£###.##"
;P1+P2+P3:LOCATE 10,20:PRINT " <<PRESS A KEY>> ":C
ALL &BB18:CLS:LOCATE 5,4:PRINT " ITEM NAME ":LOCAT
E 20,4:PRINT " ITEM PRICE "
290 FOR h=31 TO 40:FOR p=1 TO 10:LOCATE 2,6+(p*1):
PRINT h:LOCATE 6,6+(p*1):PRINT it$(h):LOCATE 22,6+
(p*1):PRINT USING "£###.##";ip(h):h=h+1:NEXT:NEXT:
P4=ip(31)+ip(32)+ip(33)+ip(34)+ip(35)+ip(36)+ip(37
)+ip(38)+ip(39)+ip(40)
293 LOCATE 12,22:PRINT"SUB TOTAL";USING "£###.##";
P1+P2+P3+P4
294 IF it$(41)="" THEN PEN 1:LOCATE 10,24:PRINT "T
OTAL AMOUNT";P1+P2+P3PEN 1:LOCATE 10,24:PRINT "TOT
AL AMOUNT ";P1+P2+P3+P4: ELSE 299:LOCATE 10,20:PRI
NT "<PRESS A KEY>":CALL &BB18:CLS:LOCATE 5,4:PRINT
 " ITEM NAME ":LOCATE 20,4:PRINT " ITEM PRICE":GOT
O 295
295 FOR w=41 TO 50:FOR p=1 TO 10:LOCATE 2,6+(p*1):
PRINT w:LOCATE 6,6+(p*1):PRINT it$(w):LOCATE 22,6+
(p*1):PRINT USING "£###.##";ip(w):w=w+1:NEXT:NEXT:
P5=ip(41)+ip(42)+ip(43)+ip(44)+ip(45)+ip(46)+ip(47
)+ip(48)+ip(49)+ip(50)
296 LOCATE 12,22:PRINT " SUB TOTAL ";USING "£###.#
#";P5:P6=P1+P2+P3+P4+P5:LOCATE 10,24:PRINT " TOTAL
 AMOUNT ";USING "£###.##";P6:LOCATE 10,20:PRINT "
 <<PRESS A KEY>> ":CALL &BB18:CLS:GOTO 15
```





```
299 PEN 2:LOCATE 10,20:PRINT " <<PRESS ANY KEY>> "
:CALL &BB18:GOTO 10: ELSE PEN 2:LOCATE 10,20:PRINT
" <<PRESS A KEY>> ":CALL &BB18:CLS:GOTO 294
300 REM -- This is the load data section --
302 SOUND 1,200,155
305 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:PEN 1:LOCATE 10,4:PEN 3:PRINT " SHOPPING
MASTER "
310 PEN 1:CAT:LOCATE 2,21:PRINT " OR PRESS [RETURN
] TO RETURN TO MENU ":IF INKEY(18)=0 THEN 20 ELSE
LOCATE 2,20:INPUT " Enter file name to load :",f$:
IF f$="" THEN 10 ELSE 320
320 OPENIN f$
330 FOR d=1 TO 50
340 INPUT #9,it$(d),ip(d),a
350 NEXT
355 CLOSEIN
360 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT
"*":NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT
 "*":NEXT:LOCATE 10,4:PEN 3:PRINT " SHOPPING MASTE
R "
365 PEN 1:LOCATE 8,7:PRINT " <<FINISHED LOADING>>
":PEN 2:LOCATE 12,25:PRINT " <<Press any key>> ":C
ALL &BB18:CLS:GOTO 10
400 REM -- This is the save data section --
402 SOUND 1,200,155
405 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:PEN 1:LOCATE 10,4:PEN 1:PRINT " SHOPPING
MASTER "
406 PEN 1:CAT:LOCATE 2,21:PRINT " OR PRESS [RETURN
] TO RETURN TO MENU ":IF INKEY(18)=0 THEN 20 ELSE
LOCATE 2,20:INPUT "Enter file name to save :",f$:I
F f$="" THEN 10 ELSE 410
410 OPENOUT f$
420 FOR d=1 TO 50
430 WRITE #9,it$(d),ip(d),a
440 NEXT
445 CLOSEOUT
450 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT
"*":NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT
 "*":NEXT:LOCATE 10,4:PEN 3:PRINT " SHOPPING MASTE
R "
455 PEN 1:LOCATE 8,7:PRINT " <<FINISHED SAVEING>>
":PEN 2:LOCATE 12,25:PRINT " <<Press any key>> ":C
ALL &BB18:CLS:GOTO 10
600 REM -- This is the exit program section --
602 SOUND 1,200,155
605 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT
"*":NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT
 "*":NEXT:LOCATE 10,4:PEN 3:PRINT " SHOPPING MASTE
R "
610 PEN 1:LOCATE 2,5:PRINT " DO YOU WISH TO LEAVE
PROGRAM [Y/N] "
620 l$=INKEY$
630 IF l$="" THEN 620
640 IF l$="Y" OR l$="y" THEN 660
650 IF l$="N" OR l$="n" THEN 10
660 CLS:NEW
700 REM -- This is the print to printer section --
702 SOUND 1,200,155:IF it$(1)="" THEN 703 ELSE 705
703 CLS:PEN 1:LOCATE 8,6:PRINT " <No Data To Print
 To Printer> ":PEN 2:LOCATE 12,20:PRINT "<< Press
any key >>":CALL &BB18:GOTO 10 ELSE 705
705 CLS:FOR t=1 TO 38:LOCATE 1+(t),1:PEN 2:PRINT "
#":NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 2:PRINT
"#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT
"*":NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT
 "*":NEXT:LOCATE 10,2:PEN 1:PRINT " SHOPPING MASTE
R "
710 LOCATE 8,4:PRINT " PRINTING DATA TO PRINTER ":
LOCATE 10,6:PRINT " PLEASE WAIT...."
715 PRINT #8,TAB(9);"---------------------":PRINT #
8,TAB(10);" SHOPPING LIST ":PRINT #8,TAB(9);"-----
----------------"
720 PRINT #8,"ITEM NO. ";"ITEM NAME ";"    ";" ITE
M PRICE "
730 FOR d=1 TO 50
740 IF it$(d)="" THEN PRINT #8,TAB(1);"___________
______________":PRINT #8,TAB(12) " TOTAL AMOUNT >
";USING "£###.##";P6:PEN 1:LOCATE 4,8:PRINT "<<No
Data To Print To Printer>>":PEN 2:LOCATE 12,20:PRI
NT "<<Press any key>>":CALL &BB18:GOTO 10 ELSE 750
750 PRINT #8,d,it$(d)," ";USING "£###.##";ip(d):NE
XT
9900 MODE 1:INK 0,0:INK 1,26:INK 2,6:INK 3,26,20

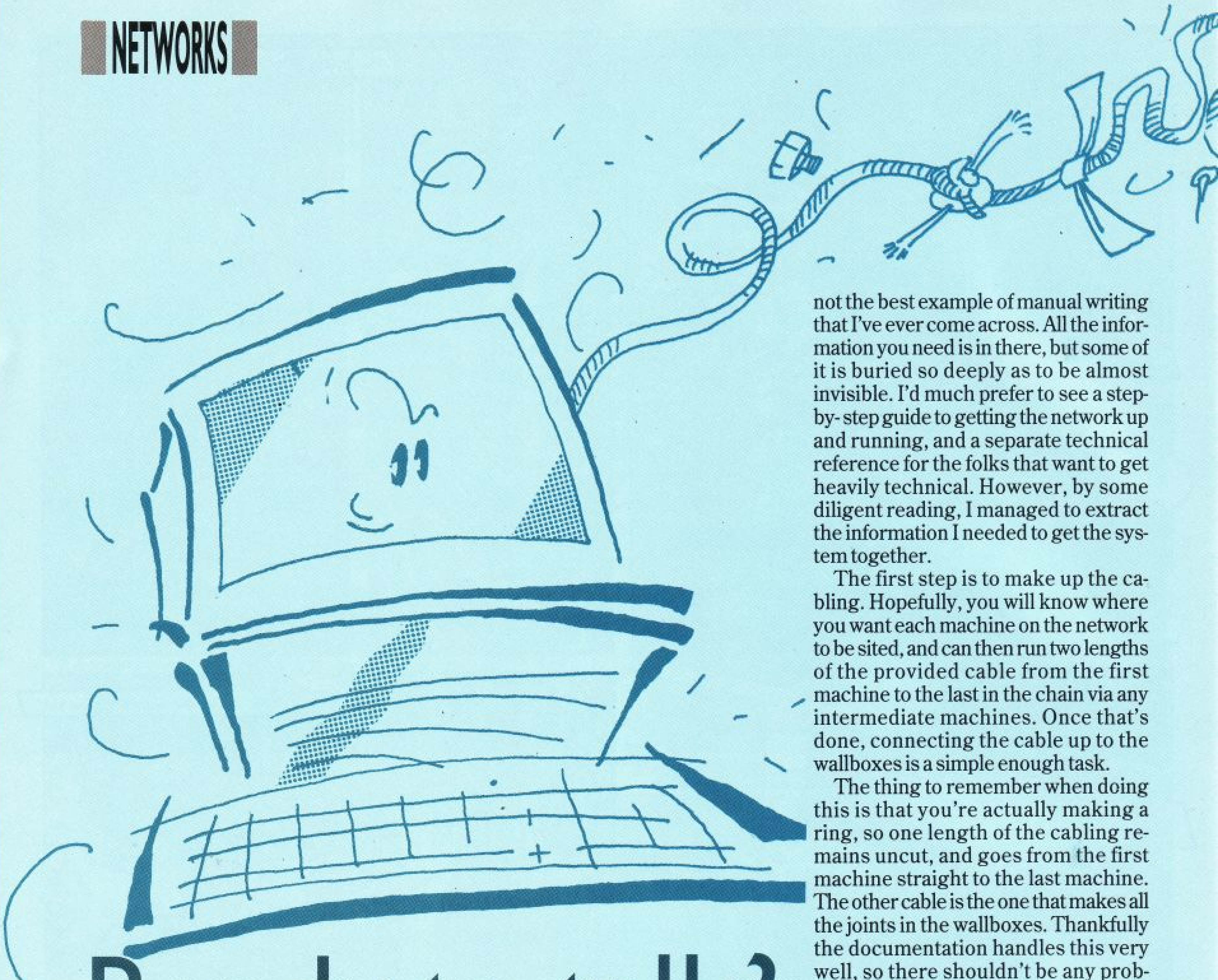
9905 SOUND 1,200,155
9910 FOR t=1 TO 38:LOCATE 1+(t),1:PEN 1:PRINT "#":
NEXT:FOR t=1 TO 38:LOCATE 1+(t),25:PEN 1:PRINT "#"
:NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT "*"
:NEXT:FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT "*
":NEXT:PEN 3:LOCATE 9,6:PRINT "*******************
"
9920 PEN 1:LOCATE 10,7:PRINT " SHOPPING MASTER "
9930 PEN 3:LOCATE 9,8:PRINT "*******************":
PEN 2:LOCATE 8,13:PRINT "Written By Alan Kennedy "
9940 FOR t=1 TO 10:PEN 3:LOCATE 1+(t),1:NEXT:PEN 1
:LOCATE 12,24:PRINT " <Press any key> ":CALL &BB18
:CLS:GOTO 10
9945 CLS:FOR t=1 TO 38:PEN 1:LOCATE 1+(t),1:PRINT
"#":NEXT:FOR t=1 TO 38:PEN 1:LOCATE 1+(t),25:PRINT
 "#":NEXT:FOR t=1 TO 23:LOCATE 1,1+(t):PEN 3:PRINT
 "*":NEXT
9950 FOR t=1 TO 23:LOCATE 40,1+(t):PEN 3:PRINT "*"
:NEXT
9960 PEN 1:LOCATE 5,4:INPUT "Amount you have to sp
end £";a
9970 IF a=0 THEN 9960
9980 IF a<1 OR a>999.99 THEN 9960
9990 CLS:GOTO 10
```




MYTH - History in the making
The struggle moves on to ancient Greece and more horrors await.
Level 2
What in God's name...!
The spectre...
The statue falls
Good job I knew about Achilles' weak heel!
A tempting sight...
Phew!
... turns into...
...TERROR!
Nngh!
The dove...
...the symbol of life.
Into the cavern of the Medusa.
I must not look at her face.



EEEEEEEE
Victory.
This will come in very handy.
The Hydra awaits...
...but Medusa still has her purposes.
C. Jones '91
The sphere is mine!
As the Hydra closes for the kill...
...the serpent stare spells death for the reptile.
Stop me now, Dameron, or your evil days are numbered.
The evil is conquered, temporarily, but our hero's work is far from finished as the teleport once more throws him through time to the next challenge.



Ready to talk?

David Dorn sets up a CPC network and gets chatting with his PC.

Now that you've got some idea of what's involved in a network, reading through this section on setting up our CPC network ought to be a little easier to understand.

As you CPC comes out of the box, it really isn't set up to talk to anything other than its built-in filing system, either tape or disc. Even a simple thing like an RS232C interface is an add-on, and so it is with the network adapter. For the purposes of this review, we linked two CPC 6128s and an IBM PC compatible machine together to make up our three station network. This isn't the limit of the system, of course. Had we had more adapters, we could just as easily have had more CPCs and more PCs on the net, but this setup serves to show just how easy – or otherwise – it is to put a workgroup together.

Solving the Jigsaw.

My normal modus operandi is to get stuck in without reference to any manual, just to see how far I can get before I have to read the thing. I suspect that this is much what the average user does, judging by how many problems I've been able to solve for folks just by turning to the right page in the manual. In this case, having had some experience of networking PCs together, I decided that a read through the manual before I even unpacked the rest of the kit was a definite must, and so it proved.

To be honest, the documentation provided with Nine Tiles' Simplenet is not the best example of manual writing that I've ever come across. All the information you need is in there, but some of it is buried so deeply as to be almost invisible. I'd much prefer to see a step-by-step guide to getting the network up and running, and a separate technical reference for the folks that want to get heavily technical. However, by some diligent reading, I managed to extract the information I needed to get the system together.

The first step is to make up the cabling. Hopefully, you will know where you want each machine on the network to be sited, and can then run two lengths of the provided cable from the first machine to the last in the chain via any intermediate machines. Once that's done, connecting the cable up to the wallboxes is a simple enough task.

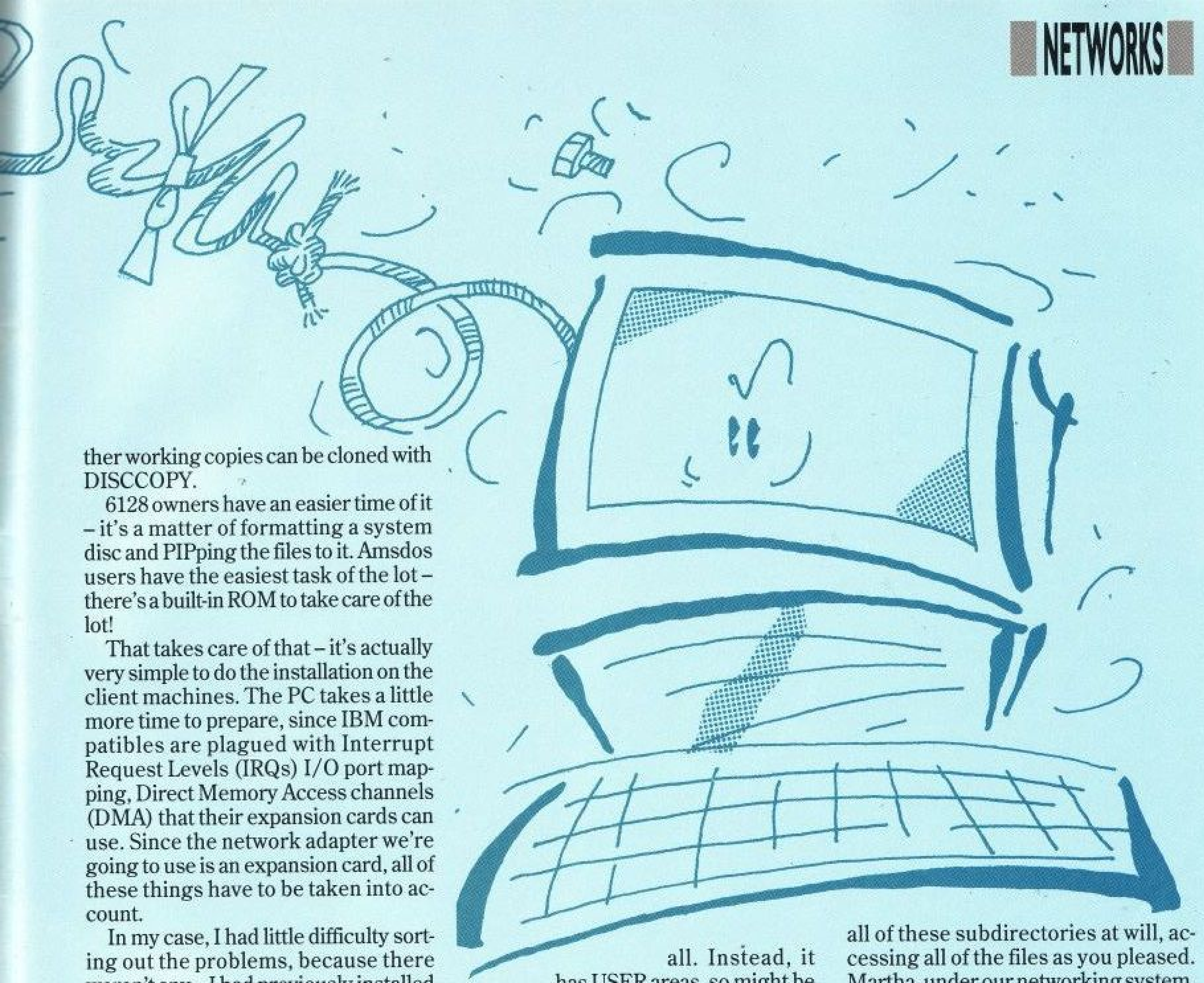
The thing to remember when doing this is that you're actually making a ring, so one length of the cabling remains uncut, and goes from the first machine straight to the last machine. The other cable is the one that makes all the joints in the wallboxes. Thankfully the documentation handles this very well, so there shouldn't be any problems.

The CPC is connected to the network via an interface and a length of curly lead with a nine pin plug at the computer end, and an old fashioned telephone jack at the other – the interface attaches as per usual with these things to the expansion port on your machine. One point here – there is no through connector, so you can't daisy chain anything else onto your CPC from it.

The PC takes an internal card, and connects to the network in a similar fashion. Perhaps we'll look at CPC only networks next month after I've checked it out with the CPC Hard Drive.

Once the cabling and adapters are sorted out, it's time to start installing software. The PC, in this case, is going to be the file server, and the CPCs are going to be the 'client' machines. We'll look at the CPCs first.

464 first. The first task is to make a work disk containing the necessary files for running the network. For CPM 2.2, the manual suggests formatting a blank disc and using the CP/M Filecopy command to copy all the files from the master to the work disc, rather than using the DISCCOPY command – fur-



ther working copies can be cloned with DISCCOPY.

6128 owners have an easier time of it – it's a matter of formatting a system disc and PIPping the files to it. Amsdos users have the easiest task of the lot – there's a built-in ROM to take care of the lot!

That takes care of that – it's actually very simple to do the installation on the client machines. The PC takes a little more time to prepare, since IBM compatibles are plagued with Interrupt Request Levels (IRQs) I/O port mapping, Direct Memory Access channels (DMA) that their expansion cards can use. Since the network adapter we're going to use is an expansion card, all of these things have to be taken into account.

In my case, I had little difficulty sorting out the problems, because there weren't any – I had previously installed a Nine Tiles network for a review in another magazine, and the values it used had not been claimed by any other card, so I got the chance to use those. The majority of people will experience no problems with the installation, purely because they're unlikely to have myriads of expansion cards in their systems, and the Simplenet defaults are sensible.

Subdirectories.

Now comes the interesting bit, and a wee bit of a tutorial for you. Using a network from a CPC with only the filing system that Amsdos/CPM allows would be a difficult task. Part of a network's nature is its security, its ability to hold files for one user that no other user can see. If all files are held in, for instance, Drive a: User 0: the world and his wife can gain access to them, which is about as secure as a chocolate padlock.

Therefore, a network needs to be able to use subdirectories – in other words a hierarchical tree structure of files and directories. We've gone through this before, but it's worth repeating.

CP/M allows for no subdirectories at all. Instead, it has USER areas, so might be considered a two level system. A hierarchical system allows for levels to be nested as deeply as you like, and allows for file grouping that makes for sensible storage criteria. Our system begins at the ROOT directory. This is the base level of the structure, and can hold both files and directories.

The next level is a level of sub-directories – in this case, JOE, FRED, and MARTHA. Each can hold both files and further subdirectories. Now, Joe may be a spreadsheet and database wizard. Indeed it appears so, since he has only three subdirectories – SPREAD, DBASE, and MISC. However, his SPREAD subdirectory has further subdirectories branching off from it. I've used only two – JAN and FEB, but he could have as many as he wants, as long as the disk can handle it.

Fred and Martha have their own subdirectories, and, again, each has its own structure according to their needs. So far Rodos users will be familiar with this, as will anyone who uses an MSDOS machine.

But there's one further twist. If you had this structure on your system at home, you'd be able to wander through all of these subdirectories at will, accessing all of the files as you pleased. Martha, under our networking system, cannot gain access to Fred's FRED subdirectory, since the network assigns a LOGICAL DRIVE to her (it may be C:) that starts at the subdirectory MARTHA (properly written as \MARTHA – the backslash indicates that Martha is a subdirectory off the root directory).

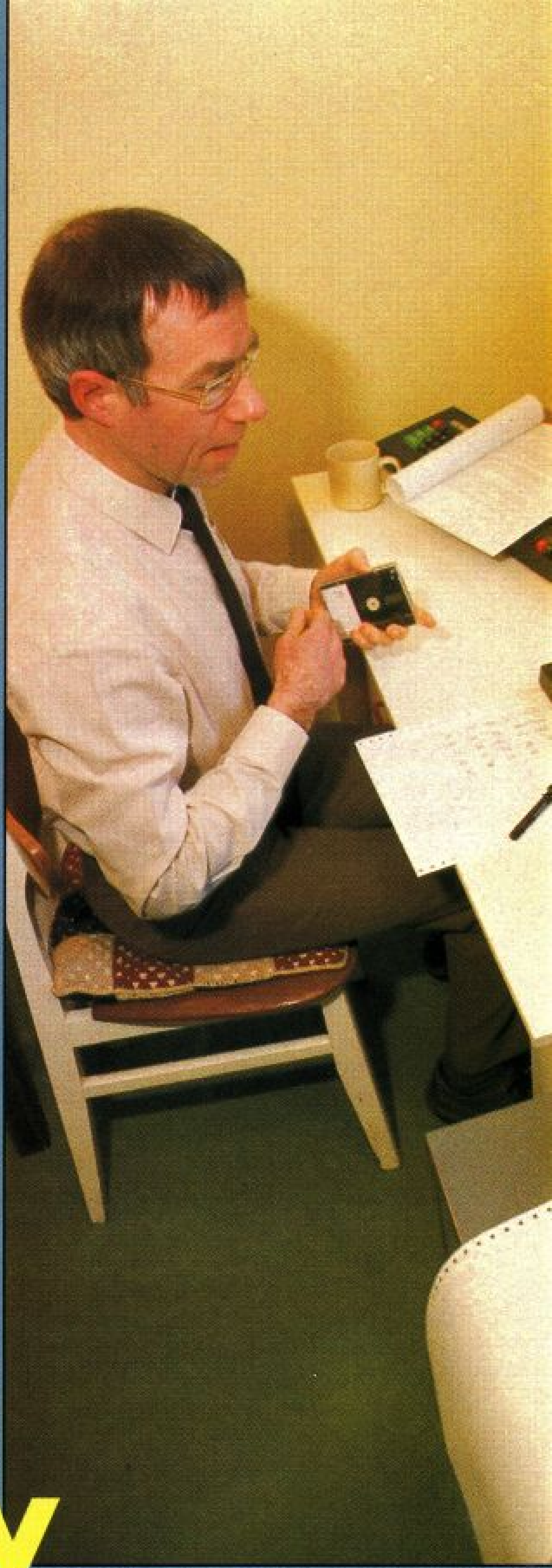
So, while a single user of this mythical drive would get to Martha's NETWORK.TXT file by calling it C:\MARTHA\WORDS\ REVIEWS\ NETWORK.TXT, Martha calls it C:\WORDS\REVIEWS\NETWORK.TXT – she need not be aware that any other user has any access to the disk that her directory is located on. In other words, as far as users of the network are concerned, the root directory does not exist. They only see the bits they need to see.

The only exception to this is the system administrator, or superuser, who HAS to be able to see everything, to make sure that users are given the right access privileges.

I think that's a reasonable place to stop for this month. Next month we'll look at the network in action and see how you actually use it to store files, communicate and so forth.

Pretty Perfect

Vic Barnes pays a visit to sunny Clacton and gets quite carried away with what he finds there.



Love affairs are all-consuming. They eat into your life, obsess your waking hours and devour your sleep. You can't do anything about them except give way and succumb to their fatal attractions. But to surrender is simply not enough. You must pursue them through heartaches and tears until you reach the bitter/sweet end. And sometimes the end is a long time coming.

When you first meet Peter Brunning, you realise that here is a man who has been on the treadmill for quite some time. After talking to him, you are equally certain that he is more than happy to remain there. He has a love affair which most of us can probably understand. His obsession is producing beautiful and definitive, word processing-related programs. Naturally, that is not enough, they must be perfect. Every one of his creations has an addition that will enhance and extend it. Take Brunword Elite for example.



Following the original Brunword, Peter developed Brunword *Elite*. This took word processing for the CPC one stage further by incorporating a highly innovative page-layout system with a selection of customised, top-quality fonts which made the most of 24-pin printer technology. *Headline*, a program especially designed for 9-pin users (but also suitable for owners of 24-pin machines) was the sequel and included more, larger format fonts.

With a full compliment of *Elite* programs you can create stunning letters, produce wonderful looking documents and even edit and print your own fanzine.

I've been using a Star LC24-20 with *Headline* (and *Elite*) for some months now. By carefully juggling fonts and mixing them into the page-layout facility I've been able to produce letters and documents that have even exceeded my own lofty expectations. Now, the lily has been gilded.

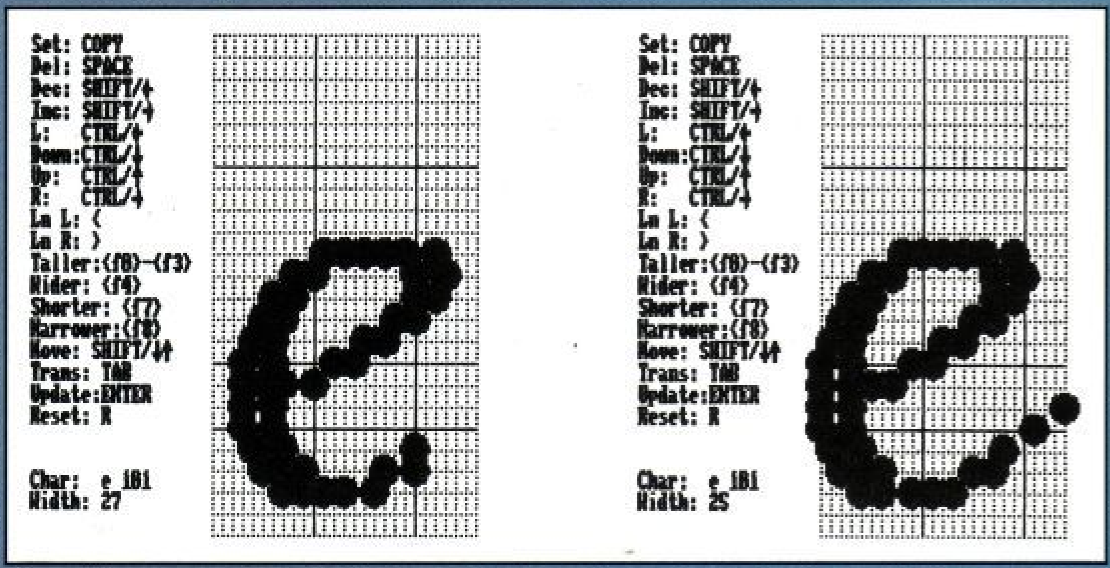
Brunning Software has just released *32 Pin Font Editor*. When I heard about it I was largely underwhelmed. I had no wish to tamper with the 'perfect' *Elite* typefaces and I had little desire to spend six months creating my own. I'd already tried this a couple of years ago with *Qualitas* and knew what a time-consuming process it was. However, the more I learned about it the more interested I became. Suitably intrigued I climbed onto the trusty steed and aimed it towards Little Clacton.

I spent a day trying to follow Peter Brunning's enthusiastic teachings and knowing he doesn't suffer fools gladly, nodded my head sagely every time he explained a particularly difficult point. Eventually though, everything dropped into place and the font editor became a very simple program to use. It has all sorts of time-saving short cuts and has been carefully designed so that even a novice (like me) can use it.

What does *32 Pin Font Editor* give you for your money? Well, first of all you get two brand new 'display' fonts called Chelmer and Clacton (!) and these are the best *Headline* fonts yet. Then of course you get the font editor itself.

If you've never used one before, a font editor is not nearly as intimidating as you are probably imagining. If you already own *Headline* and take pride in the quality of its output, from a 9 or 24-pin printer, then you will find the editor

Below left, as scanned in. Below right, final form after editing.





more than a little useful. It has two prime functions: it can modify existing fonts and can help you create new ones.

Naturally, there are certain limitations: only *Headline* fonts can be loaded into the editor, so don't attempt to modify your *Elite* fonts. However, finished results can be saved to either format.

Modification of a *Headline* font is really quite simple. Following the on-screen prompt, load *any* designated font into the editor. Press two more keys and the character selected for modification appears on screen. It is shown as a series of enlarged blobs on a grid which basically represents a number of 'pins' and the limits you can work within. The space bar enables you to delete a 'blob' and the copy key to add one. When you have finished work on each letter simply hit the return key to update. And that's all there is to it!

To make things easier there are a number of shortcuts and clever refinements which speed-up your work and will help turn you into a regular William Caxton!

Function keys have been defined to allow the following: automatic widening, narrowing, lengthening, or shortening of the character. These eliminate between 50 and 100 per cent of the work involved in modifying between formats. If you make a real mess when working just hit the 'R' (for 'reset') key and the character reverts to the way it was before you got your destructive little paws on it!

After modifying all upper and lower-case characters, symbols and numbers, you are given the option to perform a 'Download Save'. This feature should only be used when you're certain the font is as perfect as it can be. Any font saved in this format *cannot* be reloaded into the editor. However, should you wish to continue work at a later date, the option for a normal save is used and the font can be reloaded at any time for fine-tuning.

It's the above features which make using the editor a pleasure instead of a pain. But there is one feature you will not find. Conspicuous by its deliberate absence is the facility to start designing a font, using a blank grid. Brunning Software claim that it is always better to load a font which has at least one feature correct, even if this is only the actual size of letters.

Creative genius though, has not been ignored. If you are fortunate to own a *Dart* Scanner and an *Amstrad* printer, your own handwriting can be scanned into the editor. This must be written onto a matrix – specially printed by the program. It can be modified, straightened (!) and retouched and a font based on the character of your artistic endeavours is created. The *Clacton* font started life in just this way and was produced from Peter Brunning's own handwriting – when switched to 'careful' mode!

Before writing this, I converted three *Headline* fonts for use with *Elite* and my Star LC24-10. This gave me a number of convenient features such as a more manageable size of character to use as 'body copy'; at least four times faster printing; all printer facilities such as italic, underline, shadow and outline etc, and the ability to use absolute tabs and temporary margins.

The converted fonts were *Clacton*, *Chelmer* and *Slimline*. All were easy to modify, especially *Chelmer*, which simply required the use of the reduction key <F7> and a minimal degree of retouching. *Slimline* was similar, but needed lengthening <F8>. *Clacton* required the most work due to its unusually long ascenders and descenders. Because of these the font would not fit into the 24-pin format, even after reduction. A compromise was called for so I elected to truncate the descenders and raise all characters one pin higher. This has worked very well and although Peter Brunning might think I have robbed his font of its essential character, *I* like it!

There is one final use for the font editor. It can be used to create special characters. For example, an electrical engineer could replace all 'unused' characters on the CPC keyboard with carefully designed electricity symbols. You could even adapt a font to print in Arabic, Russian or Hebrew. Then of course there are all those useful little symbols, that save typing and relay an instant visual message, like telephones, hands arrows and even road signs. The potential is enormous.

In conclusion, what can I say? Another piece of superlative (bug free) software from the *Brunword* stable. Stunning value for money, the *32 Pin Font Editor package*, which includes *Chelmer* and *Clacton* is £25. The two fonts are £20 if purchased separately and the font editor only, is also £20. The programs are obtainable by mail order from Brunning Software.

32 PIN FONT EDITOR

This is CHELMER font from the HEADLINE program and was printed by a 24 pin machine. Perfect for titles & display print.

CLACTON font is described as peaceful and flowing! It is excellent for 'informal' printing and as an unusual substitute for italic print.

A neat alternative to condensed print is SLIMLINE font. It is great for footnotes and all those occasions when you have to cram a lot of print into a very small space.

The modified version of CHELMER for use as 'body' copy. It prints at least 4 times as quickly as the HEADLINE font and (like other 24 pin fonts) supports all printer facilities, *including italic*.
• Two extra characters ☎ have been designed.

CLACTON 24 pin ELITE version has truncated descenters, but retains the 'informal' look of the original. It prints twice as quickly as Chelmer.

The 24 pin SLIMLINE conversion is an excellent alternative to condensed print, and is very different to the original. Its main drawback is that it emphasizes the STAR printer's fixed spaces.

Quite a selection

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I HAVE STARTED A BUSINESS for people who want tailor-made programs for all CPC's. Also, does anybody have a Firmware Guide for the 464 to lend? Contact Mr Manning, 8 Steerforth Street, London SW18 4HH.

Fanzines

CPC FANZINE called Play Mates, issue seven due soon, full of reviews, tips, pokes and bonzo news with P&P just £1. Carl Surrey, 37 Fairfield Way, Barnet, Herts. EN5 2BQ.

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CPC PENPALS wanted to swap games or demos on disc or tape. Send your lists to Carl Wilson, 64 Fishponds Road, Kenilworth, Warks., CV8 1EZ. Greetings to NWC and CBS!

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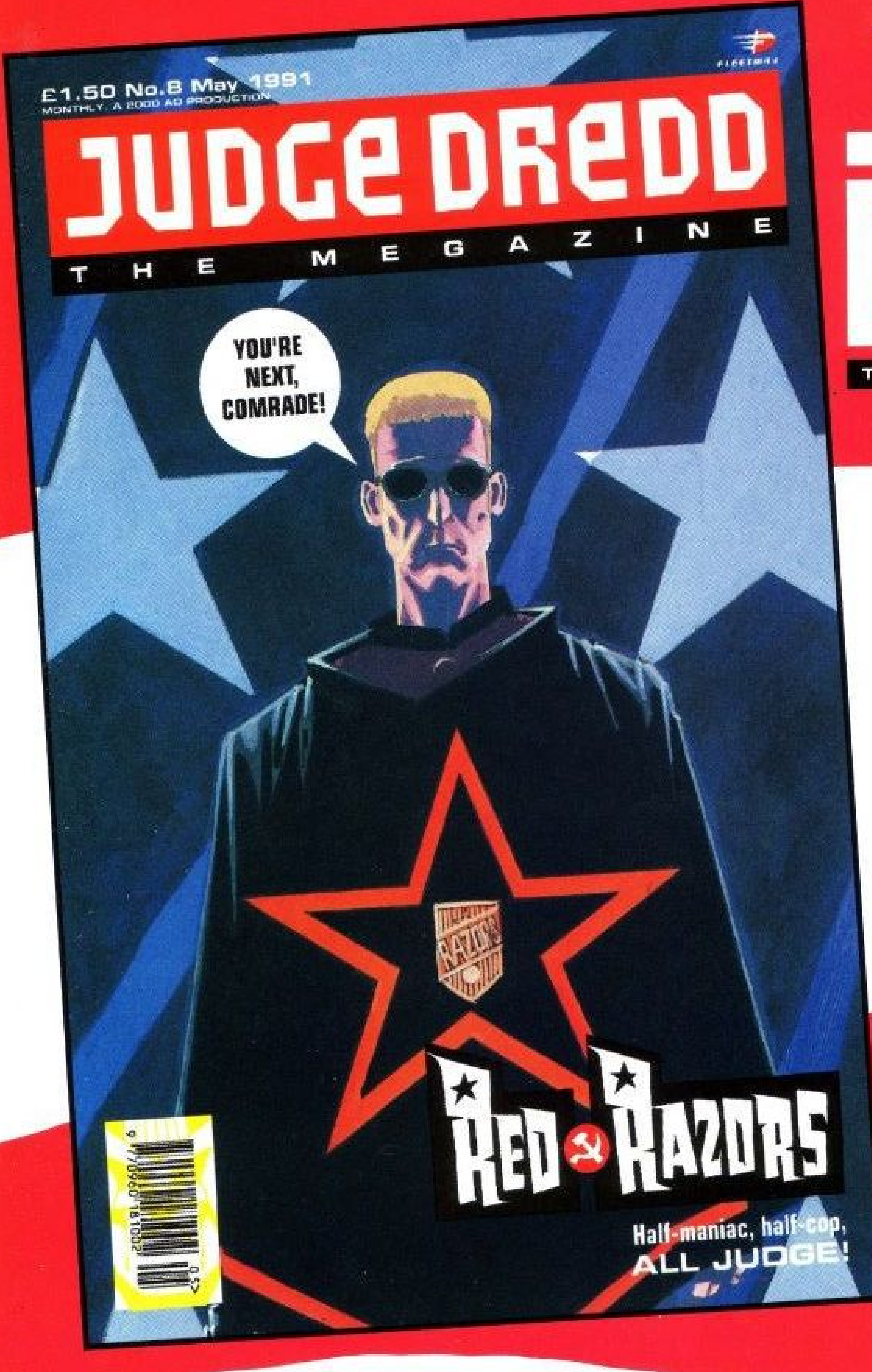
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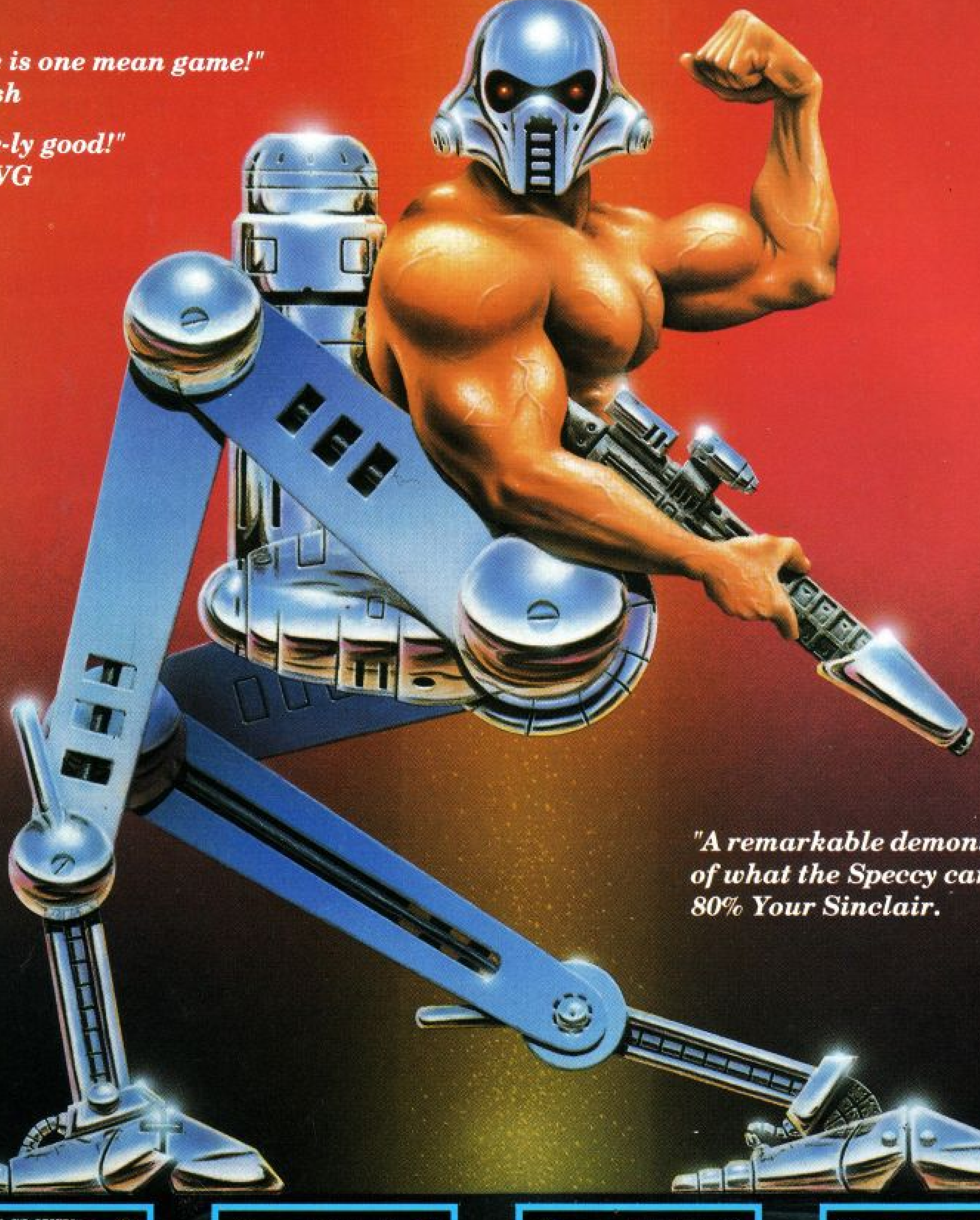


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